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THE PEACE CORPS EDUCATIONAL TELEVISION PROJECT IN COLOMBIA--TWO YEARS OF RESEARCH. RESEARCH REPORT NO. 10, FEEDBACK TO THE PEACE CORPS ON PROJECT PROGRESS--SOME MODELS AND SUGGESTIONS.

BY- COMSTOCK, GEORGE MACCOBY, NATHAN
STANFORD UNIV., CALIF.INST. FOR COMMUN. RES.

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RESEARCH TECHNIQUES EMPLOYED TO EVALUATE THE EFFECTIVENESS OF THE PEACE CORPS ETV PROJECT STEMMED FROM TWO MODELS OF FEEDBACK. INFORMATION PROVIDED IN "INDIVIDUAL FEEDBACK" IS OF VALUE AT A PRAGMATIC LEVEL, WHEREAS INFORMATION FROM "PROJECT FEEDBACK" CAN BE USED BY ADMINISTRATORS FOR POLICY DECISIONS. THE MAJOR TOOL FOR PROJECT FEEDBACK, TREATED ALONE IN THIS REPORT, WAS SELF-COMPLETION MAIL-RETURN QUESTIONNAIRES, DISTRIBUTED BY PEACE CORPS VOLUNTEERS WORKING IN THE FIELD AND DESIGNED TO MEASURE COLOMBIAN TEACHERS' ATTITUDES TOWARD THE PROJECT. RESEARCHERS WERE PLEASED WITH THE METHODOLOGICAL SUCCESS OF THE QUESTIONNAIRES, WHICH WERE USED IN SIX PROJECT SURVEYS. QUESTIONNAIRE ITEMS COVERED SATISFACTION WITH THE TELEVISION CURRICULUM, DISSATISFACTION WITH THE CURRICULUM (THROUGH A SPECIALLY DEVELOPED "CHECK-LIST" PROCEDURE), SATISFACTION WITH TELEVISED COURSES FOR TEACHERS, AND EVALUATION OF TEACHER GUIDES FOR PREPARING LESSONS AND MOTIVATING STUDENTS. ADDITIONAL RESEARCH TECHNIQUES TO OBTAIN FEEDBACK WERE SYSTEMATIC TEACHER INTERVIEWS, SCHOOL AND CLASS VISITS, SMALL SCALE TESTING, USE OF AN ETV LABORATORY, AND THE CRITICAL INCIDENT TECHNIQUE. APPENDICES INCLUDE QUESTIONNAIRES IN BOTH SPANISH AND ENGLISH, WITH REFERENCES TO DISCUSSION OF ITEMS IN THE TEXT OF THIS REPORT. (LH)

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a report of the

INSTITUTE FOR COMMUNICATION RESEARCH
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U.S. DEPARTMENT OF HEALTH, EDUCATION & WELFARE
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THE PEACE CORPS EDUCATIONAL TELEVISION PROJECT IN COLOMBIA -- TWO YEARS OF RESEARCH.

Research Report No. 10:

Feedback to the Peace Corps on Project Progress -- Some Models and Suggestions.

By George Comstock and Nathan Maccoby

Institute for Communication Research
Stanford University
November, 1966

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This research was conducted under Peace Corps Contract No. W-276, entitled, "To Provide Continuous Information on the Effectiveness of the Peace Corps Educational Television (ETV) Project in Colombia." This is one of 12 volumes in a series, The Peace Corps Educational Television Project in Colombia--Two Years of Research. Titles of the other volumes and some brief facts on the ETV Project and on the research can be found at the end of this report.

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One of the biggest problems of any program aimed at social change is feedback -- reliable, useful information about how well it is accomplishing its objectives and where it should direct its energies. Only through feedback can a program adapt to conditions, or improve. Feedback is especially important under certain conditions -- when a program is new, the people or environment unfamiliar, the number of persons with whom it must deal large, or the variety of circumstances in which it must function diverse. These are often the conditions for Peace Corps as well as other U.S.-supported efforts to help a developing country modernize some aspect of its life. And under such conditions, feedback is often extremely hard to get. This report describes some of the procedures we developed during two years of research to provide feedback for the Peace Corps Educational Television (ETV) Project in Colombia. The ETV Project faced all of the conditions which make feedback important and difficult. Hopefully, our experience, gained by trial and error, will be of help in obtaining feedback in the future for the project in Colombia, or for other kinds of modernization programs abroad.

The Special Nature of This Report

Unlike the other nine reports in this series on our research on the ETV Project, this report is not devoted to the actual results of research. Instead, it is concerned with *how* some of those results were obtained. It is concerned with the methods and techniques we found most successful. However, it is not a complete review of all the research procedures we used. It is only concerned with those which provided information of direct and immediate utility for making decisions about what the project should do next. It also concentrates on those procedures which could be used readily by someone with a minimum of research experience, and which do not require extensive material or equipment. This is one of the important benefits of research in addition to data and findings -- it results in the devising of tools which others can apply later with much more ease and far less time and expense than were necessary for their development. Because they have been used before, and have proved successful, many of the procedures described in this report could be used again with little or no modification.

Some Background

The feedback problem, and our attempted solutions, can be better understood after a brief review of the operations of the ETV Project itself. The project faced two major tasks in becoming a functioning success. One was the production of televised instruction for pupils in public primary schools, and for their teachers. The other was the setting up of a network of schools with television to receive the instruction. Because the use of ETV in the school turned out to demand so much that was new for schools and teachers, ETV involved far more than the mere installation of TV sets -- it also required the training of teachers in how to teach in conjunction with television, the reorganization of schools to meet the rigid schedules imposed by ETV, and often the mobilization of the school and sometimes of the community to make the school suitable for television -- for adequate wiring, electricity supply, security of the set from thievery, and a suitable room for viewing.

When the ETV Project began in early 1964, it was telecasting 10 different courses to primary school pupils, with each consisting of two 15 minute televised lessons each week for a weekly total of 300 minutes of television, and some 200 schools, 1,000 teachers, and 38,000 pupils were participating. By the end of 1965, when our research ended, 15 different courses were being telecast for a weekly total of 450 minutes of television, and some 925 schools, 7,000 teachers, and 260,000 pupils were participating. Moreover, special programs and courses were telecast for the in-service training of primary school teachers. At the beginning, only schools in Bogota, Colombia's capital, and the surrounding Department (state) of Cundinamarca were included. By the end of 1965, schools in six other Departments were included. During the two years, the number of Volunteers working in the ETV Project ranged from about 60 to 85 (excluding the overlap of terminating and replacement Volunteers). Except for about half a dozen assigned to the installation and maintenance of TV sets in schools, these Volunteers were either concerned with a) the production of televised instruction, or b) the effective use of the televised instruction in the schools by the classroom teachers, who were expected to build their own teaching around the "core" of instruction provided by the telecasts. Throughout, roughly one-third of the Volunteers were in production, and slightly more than half to two-thirds in "utilization" -- the term used to designate those working in the schools with teachers, because they were concerned with helping teachers to make the most effective use of televised instruction. Thus, on the one hand, the project was concerned with the success of a broad and extensive televised curriculum, and on the other, with the reception of that curriculum in schools, its effective treatment by teachers, and the success of the "utilization" Volunteers in promoting these goals.[1]

The Organization of This Report

We attempted to provide feedback about both of the project's tasks. In Part I of this report, we outline some of the ways in which we obtained feedback on the televised instruction. In Part II, we outline some of the ways in which we obtained feedback on the project's impact in the schools and the Volunteers' efforts to make ETV effective there. In each, a variety of feedback procedures are described. For each procedure, we have tried to explain not only *what* we did, but *why* we did it, and to cover some of the *problems* we encountered and the *conditions* necessary for its use. When a procedure involves a particular device, such as a set of questions in a survey questionnaire, we have included it verbatim, so that it might be more easily used again or adapted. We have also included examples of the ways in which the results might be set up for clear-cut presentation and interpretation. In Part III, we discuss some other feedback techniques which the ETV Project might employ; in Part IV, the flow and treatment of feedback necessary for its effective use; and, in Part V, the applicability of the techniques discussed for other kinds of projects. In Part VI, we list the places where a full report of the actual results obtained by our feedback techniques can be found.

Part I: Feedback on the Televised Instruction

One of the major concerns of any program is to obtain feedback so that it can improve its product. The primary product of the ETV Project was its televised instruction for pupils in public primary schools -- courses in 10 subjects the first year, in 15 the second year. A secondary product was the televised instruction for the in-service training of teachers, which in the first year consisted of weekly telecasts on broad educational topics, such as child psychology, and in the second year involved "short courses" in some of the same subjects -- mathematics, social science, music, and the like -- which the teachers themselves were to teach their pupils in conjunction with television.

There are two basic approaches to obtaining such feedback. One centers on finding out the reactions or attitudes toward the product of those for whom it is intended. The other centers on determining the effectiveness, regardless of reactions or attitudes, of the product in achieving its goals. They are not likely to be independent in real life, for reactions might affect effectiveness, and effectiveness might affect reactions. However, the procedures for obtaining feedback of each sort are quite different. Each poses different problems, and has different advantages. We shall look at each in turn. However, we will give the most extensive attention to feedback on teacher attitudes, and especially teacher attitudes toward the televised instruction for pupils, because the procedures and even the instruments -- such as the questionnaire -- could be used again just as we used them with little or no change. For other kinds of feedback, procedures, and especially instruments, would have to be fitted to the new situation. As a result, we can only discuss the procedures in general.

Use of Attitudes for Feedback on the Televised Instruction for Pupils

The televised instruction for pupils actually involved two groups -- the pupils, who were expected to learn from it, and the teachers, who were expected to build their own teaching around it. We did not try to obtain systematically any feedback on pupil attitudes toward the various courses. We knew they liked and enjoyed the telecasts. We observed numerous classes while they watched the televised lessons, and we always found that the children were entranced by the programs. At the slightest urging from the classroom teacher, they usually would respond to the cues of the television teacher -- to yell out a word, repeat a phrase, or sing along. Since pupils in Colombian public schools come only from the lowest social strata, few if any had television at home. For almost all, school television was their first extended exposure to the medium, and for many, especially in rural areas, it was their initial exposure. As a result, none of the children had any developed viewing habits, or notions about the kind of excitement or entertainment television might provide. Thus, there was no standard of diversion by which the instructional television might suffer in comparison. Since attitudes or reactions are of interest primarily because they presumably affect pupil motivation and interest -- important factors for learning -- it did not seem profitable to try to investigate differences in attitudes toward the various courses. The children were enthusiastic about all of them. If differences existed, they would have been so small that their effect would have been negligible. During our two years of research on the ETV Project, not one utilization Volunteer, visiting classes daily, ever suggested that pupil attitudes toward a particular course interfered with its effectiveness.

The teachers were another matter. For each 15 minute televised lesson, they were expected to provide 30 minutes of classroom teaching -- 15 minutes before, as "motivation," and 15 minutes afterward, as "follow-up." Presumably, they were to prepare this teaching in advance by using the Teacher Guides, which described the content of each telecast and gave suggestions for "motivation" and "follow-up." They were far more likely than the pupils to have had some prior experience with television, and usually they had had a great deal of exposure to movies, which are very popular as public entertainment in Colombia. Thus, they had some kind of standards for judging the televised instruction. Far more important, they had, as teachers, definite standards for judging instruction. They had ideas about what should be taught, and how it should be taught. Teaching was their job. From the teachers' viewpoint, they were experts. It seemed likely that they would have definite opinions about each of the courses. The utilization Volunteers frequently reported receiving complaints about one course or another.

Much of the success of the project depended on the classroom teachers. If they liked, they could ignore the telecasts. Even if they did not ignore them altogether, they could diminish their effectiveness by disinterested, clumsy, or haphazard "motivation" and "follow-up." In a very real sense, the fate of the project, once the televised lessons were produced, rested with the classroom teachers. It seemed very unlikely that a teacher would devote himself to inspired or even thorough teaching in conjunction with a televised course which he held in low esteem. Moreover, with numerous courses being telecast, and each teacher teaching two or three, it seemed unlikely that he would give the same attention to those he judged to be relatively inferior as he would do to the others.[2] As a result, we made a considerable effort to obtain feedback on teacher attitudes toward each of the various courses.

We used a survey, and a self-completion objective questionnaire or rating form. We chose this method because, with different teachers in each of the five grades teaching different courses with television, it would have been impossible to reach enough in each grade by personal interviewing for the results to be dependable. Moreover, we wanted each teacher to give her opinion about each course under identical conditions, so that the results for each course could be compared. Given the kind of information in which we were interested, we were afraid that personal interviewing might lead to too much variation in the way the teachers' opinions were obtained for the results for each course to be comparable. To overcome this variation, it would have been necessary to reach an even larger number with personal interviews than was necessary with a self-completion questionnaire. A self-completion questionnaire also had the advantage of easy and rapid coding and tabulation of the results.

We conducted four surveys which contained questions about the specific courses during our two years of research, one at the end of each of the four semesters of instruction. Because of the quantity of televised instruction involved, the difficulties of sampling and of reaching the teachers with questionnaires, and the job of tabulating and analyzing results, it was feasible only to obtain sweeping judgments on each course for a whole semester.[3] Moreover, conversations with the utilization Volunteers, and interviews with teachers and other school officials indicated that the teachers thought of a course as a whole. They were seldom ready with opinions on a single program. This was not surprising, since all the lessons for any one course were produced by the same director with the same television teacher, and were similar in approach, style, and treatment of material.

In our first survey, we used several questions on each course -- about whether the teachers thought it held the pupils' interest, whether it was visually attractive, and how "good" overall they thought it was. We found this was unnecessary. For determining the relative degree of approval which the teachers gave each course, a single, simple question proved sufficient. The replies to the others ranked the courses in about the same order, and gave no additional information. The single question was this:

> Taking into account all the aspects of the programs for this course* during this semester, how many of the telecasts would you say have been excellent?
>
> ______ All
>
> ______ Not all, but almost all
>
> ______ A few more than half
>
> ______ A few less than half
>
> ______ Only a few
>
> ______ Almost none
>
> *the course was named in bold letters at the top of the page, and a separate page was used for each course.

In analyzing the results, we used the per cent of teachers for each course who said all the telecasts for that course had been "excellent" as an index of teacher satisfaction. These per cents, it turned out, varied markedly among the courses, and it was possible to rank the courses from low to high in regard to teacher satisfaction. Since the content, television teacher, director, and the courses themselves varied from semester to semester, we did this for each of the four semesters. An example of the kind of data we obtained for one semester can be seen in the form of a bar graph in Figure 10:1.

What do these data tell us? They do not merely show that teacher satisfaction with the courses varied. They also show which of the courses were low, and which were high, in teacher esteem. As a result, the data provide, in regard to the courses, a set of priorities for action. They direct attention to those courses which the teachers found relatively inferior. Whether such courses are in fact inferior is another matter. The fact is that the teachers judge them so. As a consequence, it remains for project administrators to decide what should be done -- whether the courses should be revised, or whether an information campaign to overcome the teachers' misgivings by explaining why the instruction is like it is should be launched. However, the data do make it clear that something should be done, and they do point to those courses which most demand attention.

Outside of arbitrary and idealistic goals, such as 90 or 100 per cent, there is no objective criterion for what per cent of the teachers should say all the telecasts for a course were "excellent" before a course can be dismissed as posing no problem in regard to teacher attitudes. No matter how well-done a course, there will always be a few who will find some of its telecasts imperfect, and there is no way to tell just how many this might be except possibly by educated guess -- and the education needed for the guess could be obtained only through looking at the results for surveys covering courses which had reached the upper limits of quality. For any given survey, of course, the top

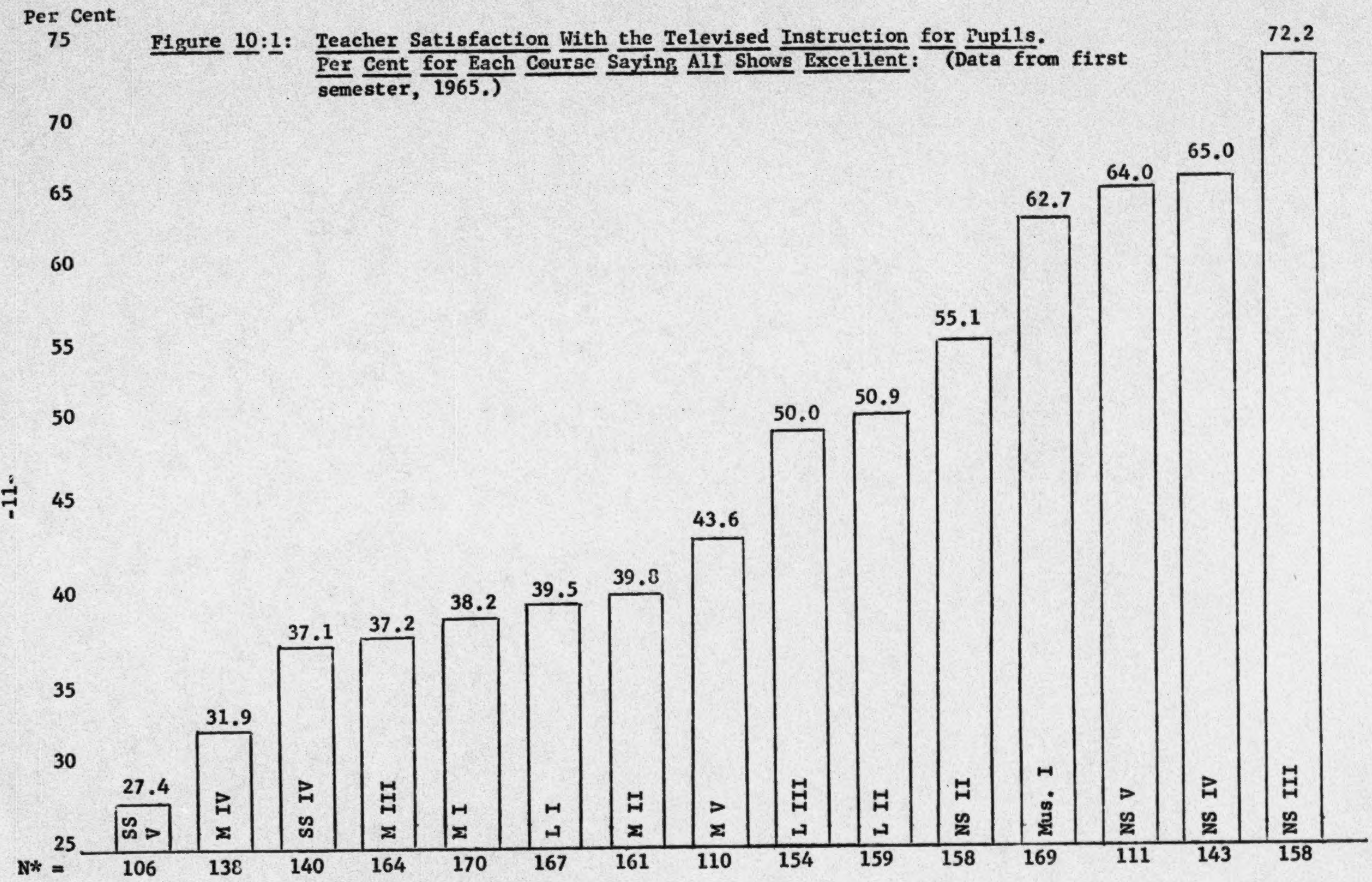


Figure 10:1: Teacher Satisfaction With the Televised Instruction for Pupils. Per Cent for Each Course Saying All Shows Excellent: (Data from first semester, 1965.)

*Number of teachers on which per cent for each course is based.

Code: SS = Social Science; NS = Natural Science; M = Mathematics; L = Lenguaje; Mus = Music. Roman Numerals = grade.

per cent provides the goal which other courses could have been expected to equal. Thus, the only reasonable target is "high" and roughly equal per cents for all courses, with "high" defined as the rating received by the most favorably evaluated course. Examples of how top ratings can be used to set targets or goals empirically can be found where the full data on teacher course ratings are presented (see Part VI, this report).

Important though such data are when there is a paucity of dependable information about what the teachers thought of the courses, they do not tell anything about the source or cause of teacher dissatisfaction with a course. As a result, we also tried to get information from our surveys on what the teachers thought was inadequate about each course.

In our first survey, as mentioned above, we included questions similar in form to the one we have just discussed but dealing with specific aspects of the courses -- level of pupil interest aroused, visuals, and the like. These failed to provide any additional information, for the ranking of courses that resulted was much the same as for the question on how many of the telecasts had been "excellent." For our two surveys in 1965 concerned with the courses, we developed a check-list for teacher complaints. We called it a "dissatisfaction inventory" because it attempted to tally the specific dissatisfactions the teachers entertained about each course. It proved very successful. It provided specific information about each course, and did not merely duplicate the results on overall excellence. This was the check-list we used:

> Which of the following problems have you encountered with the programs for this course* during the semester? (Check as many as apply. If none apply, check none.)
>
> _____ The programs cover too much material for the children to comprehend.

______ The children are not able to clearly see objects, maps, and things which are shown.

______ The programs teach little the classroom teacher cannot teach.

______ The television teacher does not have a good personality for television.

______ The programs entertain, but teach very little.

______ The children learn only from the pre-program "motivation" and the post-program "follow-up," and not from the program.

______ The programs do not teach concepts, but only facts.

*the course was named in bold letters at the top of the page, and a separate page was used for each course.

The check-list immediately followed the question on overall excellence on the questionnaire. Thus, there was a check-list for each course.

How did we construct this check-list? First, we gathered from the utilization Volunteers, teachers, and school officials about 200 complaints made by teachers about specific courses. For example, "Social Science for the fifth grade goes too fast. It covers too much, and the children can't keep up." Second, we catalogued these and grouped them by the kind of problem or dissatisfaction that was being expressed. Third, we wrote items covering each of the kinds of problems or dissatisfactions. Thus, the check-list covered all the kinds of complaints the teachers were making, and in a standardized form so that results for one course could be compared with those for another.

The check-list covered a broad range of issues. In the order of the items in the check-list, these included: a) the pace of the instruction; b) the adequacy of the visuals; c) whether the television was really giving instruction the classroom teacher was not easily able to give;

d) the acceptability of the television teacher; e) whether entertainment or "show biz" dominated the programs at the expense of instructional content; f) whether the television left too much to the classroom teacher; and, g) whether the television only presented facts, but not general principles.

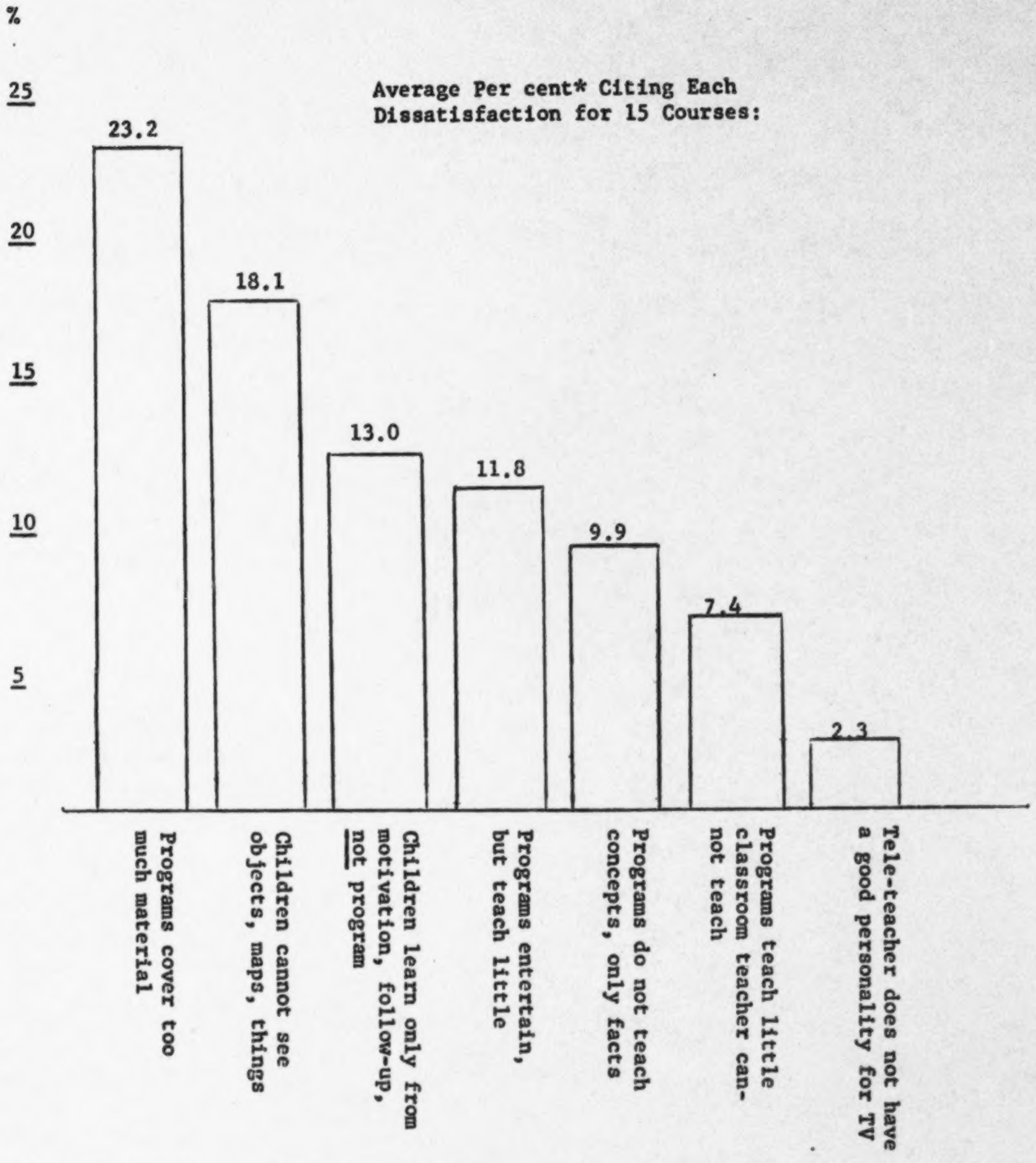
The latter item -- "The programs do not teach concepts, but only facts" -- requires a special note. It was included because several complaints were catalogued phrased almost identically to the item. However, it is likely that the complainers meant that the telecasts did not present stock phrases which the children could memorize, a practice central to most Colombian teaching, and not at all what we would mean by the same words. One of the goals of the ETV Project is to promote more imaginative teaching, and independent thinking on the part of pupils, and to discourage rote memorization. Nevertheless, the item was included because it seemed possible that there was some concern among the teachers about it. If there was widespread concern, then this would dictate giving some attention to whatever the teachers might have in mind.

In examining the results from this check-list to find out what actually displeased the teachers about the various courses, we subjected them to a variety of analyses. These are fully reported elsewhere.[4] Among other things, however, they indicated that this item provided almost no usable information. The complaint was made with relatively moderate frequency (on the average for both semesters, by about 10 per cent of the teachers, making it fifth among the seven complaints). However, unlike other complaints made with similar average frequency, the frequency varied little among courses, so that particular courses could not be singled out. Moreover, when we determined the weight of the various complaints in the making of the overall ratings for the courses, we found that this complaint invariably played almost no role at all. From every perspective, then, it seemed not only ambiguous, but irrelevant. On the basis of these analyses, we would suggest that the item be dropped should the "dissatisfaction inventory" be used again.

What kinds of information did this check-list provide? For one thing, merely constructing the check-list by collecting and grouping complaints resulted in a better picture of the kinds of factors which affected teacher attitudes toward the courses. More important, the results from the surveys indicated which of the dissatisfactions were most common for the entire televised curriculum. To find this out, we took the per cent checking a particular complaint for each of the courses, added them, and divided the total by the number of courses. In doing so, we treated the per cent for any one complaint for each course as the best estimate for the "score" for that course, without comsidering differences in the number of teachers completing the questionnaire for each course. The result was a per cent for each complaint representing its average frequency for all the courses. This led to a ranking of the complaints for the ETV curriculum, and some idea as to their frequency among the teachers. An example of the kind of data we obtained is shown in Figure 10:2, in the form of a bar graph .

As can be seen, in this instance the most prominent concern among the teachers was the pace of the instruction -- they thought it was too fast. Next came the adequacy of the visuals. There was almost no concern over the television teacher or whether the television was giving instruction the classroom teacher could just as easily provide. The data on the others can be seen in Figure 10:2.

Figure 10:2: Teacher Dissatisfactions With the Televised Instruction for Pupils -- the Entire Curriculum. (Data from first semester, 1965.)

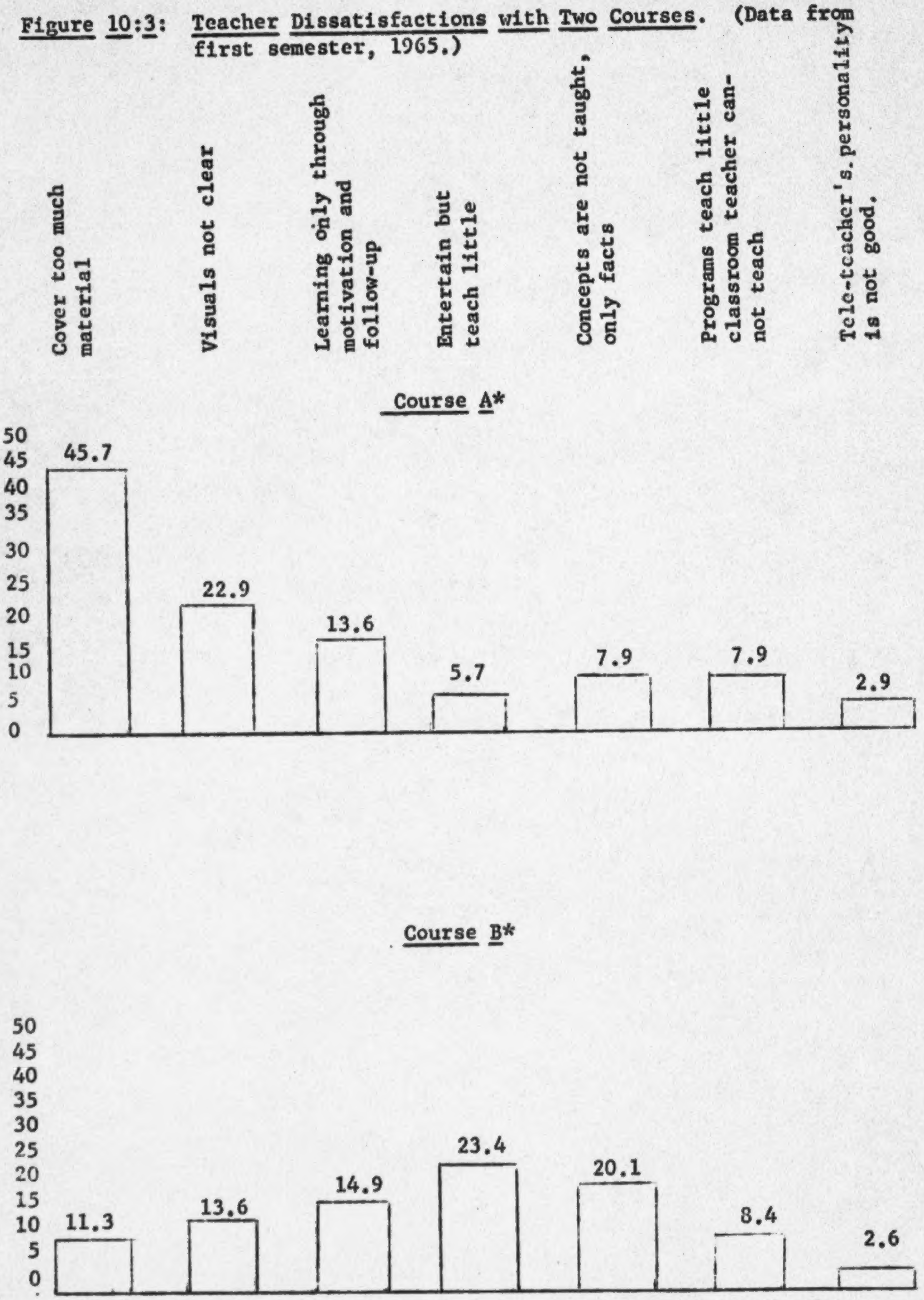


*Unweighted by number of teachers responding for each course.

The check-list also made it possible to tell just what the teachers' complaints were about each course. Examples for two courses are shown in Figure 10:3, in the form of bar graphs. These tell a story about each course. The overall height of the bar graph "skyline" gives a rough idea of how frequently the teachers complained about the course on all counts, and the shape of the "skyline", or the differences in the heights of the bars, indicate which complaints were most frequent for each course. With 15 courses, there would be 15 bar graphs. This kind of data can be looked at separately for each course by those particularly concerned with it, such as the television teacher and director, or the data for several courses can be compared -- to find differences among the courses. In turn, these differences can be used as guideposts for eliminating complaints, by indicating which courses have been relatively successful in avoiding complaints of any one sort and opening the way toward a consideration of the devices they used.

To obtain a more concise picture of how the courses fared in comparison with each other on the various complaints, the data for the courses individually can also be looked at in conjunction with the data on the overall complaints for the entire ETV curriculum. The data on the overall complaints can be used as a standard, and for each kind of complaint the per cent for each course can be shown as a deviation from that of the average. An example of this appears in Table 10:1, for three courses and four kinds of complaints. A plus sign (+) means that a course received the number of percentage points shown in excess of the average, and a minus sign (-) means that a course received the number of percentage points shown below the average. This makes it possible to see at a glance which courses received a particularly high or low number of complaints of any one kind.

Figure 10:3: Teacher Dissatisfactions with Two Courses. (Data from first semester, 1965.)



*Since this is an example of the way data might be presented, the two courses are not identified.

Table 10:1: Teacher Dissatisfactions With Individual Courses Shown as Deviations from the Average for All Courses for Each Kind of Dissatisfaction. (Data from First Semester, 1965.)

Courses:*

	C	D	E	Average per cent for all (15) courses
Programs cover too much material	+2.1** 25.3***	+35.3 58.5****	-1.7 21.5	23.2
Children cannot see objects, maps, things	+10.7 28.8	-3.9 14.2	+0.9 19.0	18.1
Children learn only from motivation, follow-up	+14.6 27.6	+1.2 14.2	-4.1 8.9	13.0
Programs entertain but teach little	+4.1 15.9	+2.4 14.2	-6.7 5.1	11.8

*Since this is presented primarily as an example of the way the data of future studies could be analyzed, the three courses are not identified.

**A plus sign (+) means that a course received the number of percentage points shown, above the average, a minus sign (-) below the average.

***The per cent making the complaint for the course. The difference between this and the average gives the figure above.

****The per cents circled indicate that the complaint was made for the course with 5 per cent or more above average frequency.

In this example, we have arbitrarily taken five or more percentage points above the average as indicating that a complaint was especially frequent for a course, and have circled these in Table 10:1. In practice, such courses would then receive particularly close scrutiny on these counts. Other ways of using such data can be found where the full results on course ratings are presented (see Part VI, this report).

As with the overall excellence of the courses, this kind of data indicates only what the teachers think. They do not show that a course is in fact relatively inferior in some respect, but only that the teachers judge it so. They only show where there is a problem. Whether the solution is course revision, or some kind of information campaign for the teachers is a matter for administrative decision.

Other Kinds of Teacher Feedback on the Televised Instruction for Pupils

In our surveys concerned with the courses, we also obtained other kinds of feedback directly related to the individual courses. In several, we used a check-list on problems in using the Teacher Guides, on which the teachers had to depend for schedules, advance information, and lesson planning. The procedure for its construction, the format, and the analysis paralleled that for the course "dissatisfaction inventory." However, the per cent of teachers making any one kind of complaint about the Guides was always quite low, with 15 per cent about the maximum for any one course (except for one item about failure of the Guides to reach them -- a production and delivery problem which plagued the project for its first year and a half). As a result, we finally turned to a single, simple question about the Guides similar to that used for the teachers' ratings of overall course excellence. This was the item:

> In regard to the information in the Teacher Guides for this course -- for how many of the telecasts for this course* during the semester would you say you received sufficient information in order to prepare a good lesson *in advance*?

_____ All the telecasts

_____ Not all, but almost all

_____ A few more than half

_____ A few less than half

_____ Only a few

_____ Almost none

*the course was named in bold letters at the top of the page, and a separate page was used for each course.

By using the per cent saying *all* the telecasts, as we did for overall course excellence, we were able to rank the Guides for *each* course as to how well, relatively, they performed their *principal function* -- providing the teacher with advance information. As with the ratings of overall course excellence, this resulted in a *set of priorities* for action -- a pin-pointing of *which* Guides the teachers were most dissatisfied with.

Because of interest in whether the teachers thought the courses too difficult or too easy for the pupils, we used a separate item on course difficulty. This was it:

> In regard to the content of this course* this semester, would you say that it is: a little too difficult, about right, or a little too easy for the pupils?

_____ A little too difficult

_____ About right

_____ A little too easy

*the course was named in bold letters at the top of the page, and a separate page was used for each course.

The phrase "a little" was used to make the question as sensitive as possible, for we wanted to encourage criticism that would permit discriminating among the courses in regard to teacher satisfaction with course difficulty. By combining the per cents for each course saying that it was either "a little too difficult" or a "little too easy," we were able to rank the courses from low to high in regard to teacher satisfaction with the level of difficulty. Then, by comparing the per cent saying "too difficult" with that saying "too easy" for each course, we could determine whether one or the other clearly predominated. In this way, we were able to obtain a good picture of how the teachers felt about the level of difficulty of each course.

When the ETV Project was considering further expansion of the televised curriculum, we included an item, in the form of a check-list, which permitted each teacher to indicate which of the courses being considered he would most like to have added (for the item, see Appendix C). Because the item allowed teachers to check courses for grades other than the one they were teaching, it also gave a check on whether the teachers really wanted more television. If not, they would check only courses outside their own grade. As it turned out, about 85 per cent chose courses in their own grade.

In our search for problems or difficulties which the project might have encountered, as well as for hints to its strengths, we used this item in our end-of-the-year survey for 1965:

> Keeping in mind all the aspects of the Educational Television Project, what do you like most? What do you like least? What would you like changed? (Indicate below.)
>
> What I like the most: ______________________________
>
> What I like the least: ______________________________
>
> What I would like changed: __________________________

The results are reported elsewhere (see Part VI, this report). Here, the only point we would like to make is that open-ended questions of this sort in a self-completion questionnaire can at best only provide a "red light" in regard to problems. For really useful information, the probing of an interviewer, or a carefully developed check-list such as the course "dissatisfaction inventory" is necessary. Moreover, this kind of question requires tedious coding depending on a certain skill at graphology. It cannot be recommended except as a supplement to other kinds of questions.

How Such Feedback Can Be Obtained

The Questionnaire: Since 10 courses were being telecast the first year, and 15 the second, and a particular teacher was only concerned with the courses for her grade, the form of the questionnaire posed a problem. To attempt to include all courses in one questionnaire would have either made it too bulky, or limited the number of questions that could be asked, or both. Moreover, this would have encouraged teachers to evaluate courses they had not used and possibly not even seen. We solved this by using a different questionnaire for each grade. General questions, intended for all teachers, went into a second section. The first section consisted of separate pages for the questions on each course. For example, during the second year a third grade teacher received a questionnaire with three identical first pages, except that each was clearly labelled as being concerned with a different course -- Mathematics III, Natural Science III, and Lenguaje III. The questionnaire, in Spanish and in English, appears in Appendix A.

The Sample: Unlike surveys for some purposes, a course evaluation survey only requires a relatively small sample. We found as few as 50 returned questionnaires for each grade to be sufficient for the overall ranking of courses or Guides. Certainly, 100 would be better.

Check-lists require more, if discriminations are to be made among the courses, for the relatively small per cent checking any one item means undependable results when the sample is small (the accuracy of the estimate a survey provides decreases for any given sample size as the per cent making a response moves away from 50 toward either extreme). The sample need not cover the entire geographical area reached by televised instruction. The assumption is that the courses constitute stimuli which any set of judges, which is the role filled by the teachers, would discriminate among in a similar manner. A group from an area highly favorable to the project might rate all courses higher, and a group from an area less favorable to the project might rate all courses lower, but their rating in comparison to each other would be similar. However, it is important that the sample be as unbiased as possible. The danger of a very biased sample is that it might so reduce variation among the replies for the various courses that no difference among them could be discerned in the results -- extremely enthusiastic teachers might put all courses close to 100 per cent in overall excellence (thus creating a "ceiling" problem), and extremely antagonistic teachers might put all courses close to zero per cent (which might be said to give rise to a "floor" problem).

The Surveying: In our surveys, the utilization Volunteers delivered the questionnaires to the teachers with a stamped, addressed envelope for return. The teachers completed it in private. Presumably, the delivery by the Volunteers encouraged them to return it, without excessively affecting their replies in the direction of what they might have thought the Volunteers wanted to hear. Accompanying letters assured the teachers of anonymity, and stressed the importance of each questionnaire's being returned.

Sampling was a problem for two reasons. Poor records made the drawing of a probability sample of teachers impossible. In addition, the Volunteers were untrained in surveying and, during much of the period of our research, too spread out geographically for thorough instruction or close supervision. Our solution, which we found quite successful, was to designate as the sample all of the teachers within those areas which Volunteers could cover completely. This eliminated the need to draw a sample, and to specially train or supervise the Volunteers. It also made the Volunteers' job more acceptable and comprehensible to them. This "zone saturation" scheme made surveying possible when it otherwise would not have been.

Of course, when training and supervision are possible, Volunteers can sample and survey at the same time. We used such a scheme with great success when the ETV Project encompassed only a small area at its beginning (for details see Report No. 2, this series).

Many persons at first doubted that surveying would be successful among Colombian teachers. It was argued that returns would be meaningless and few, because few teachers had ever completed a questionnaire, and many would suspect that their replies would be used to somehow evaluate them individually. We found no reason for such cynicism. The teachers were very cooperative, and their replies gave every sign of being meaningful. They willingly even filled in their names and schools. The per cent of return for these mail-return "zone saturation" surveys also was satisfactory -- ranging from 60 to as high as 85 per cent for zones where Volunteers were working actively at the time of the survey.

Use of Attitudes for Feedback on the Televised Instruction for Teachers

Unlike the televised instruction for pupils, for which teachers and pupils were something of a captive audience, the televised instruction for teachers had to depend entirely on their interest and motivation for its audience. Since only one topic or subject was telecast at a time, there was no concern with relative standings, as there was with the courses for pupils. Because watching was voluntary, the major concern was obtaining an audience. We attempted to provide feedback on this at the first opportunity.

From its beginning early in 1964, the ETV Project telecast educational material for the teachers. During the first year, the programs, telecast weekly, were largely unsuccessful -- simply because few teachers watched. They attempted to provide general education in broad subjects, such as child psychology; specific information, such as sources for free teaching aids; and, some training in teaching methods -- use of displays, class projects, and the like. The format was usually a lecture or discussion. Neither the topics nor the format aroused teacher interest. Moreover, the teachers found it inconvenient to watch. The programs could be scheduled only after class hours when the teachers wanted to go home, either for lunch or at the end of the day. Efforts to find out what the teachers would like failed. They had not had enough experience with television or in-service training to voice an intelligible preference. There was one hint: the programs which aroused any interest at all were those dealing with subjects which the teachers themselves taught, and were very specific and instructional in content. Otherwise, it was only clear that the teachers did not like what they had been getting.

During the second year, this "hint" was used as a lead, and short courses were telecast in the same subjects included in the primary school curriculum, but at a more advanced level. The first was called "Mathematics for Teachers," and consisted of 17 half-hour telecasts broadcast after the last class two mornings a week with both repeated on Saturdays, at the end of the half day of school. The subject was the "new math," which was also the basis of the mathematics instruction televised for pupils, and had left many teachers befuddled. Where possible, utilization Volunteers attempted to organize teachers into groups to watch and discuss the lessons at their schools. Moreover, school officials for the first time strongly urged teachers to watch.

The chances of a good-sized audience seemed good, and because of the great interest in this pilot short course, we devoted considerable research to it. The results are reported elsewhere (see Part VI, this report). Here, we want only to discuss briefly our measurements of attitudes in connection with it.

At the end of the course, we surveyed over 1,300 teachers in Bogota and the Department of Cundinamarca. We found that a goodly number had watched. We also found that a majority would favor conventional instruction, even among those who had watched quite a few of the programs. More important, however, we found that a majority of the teachers doubted that they could learn as much from television as from conventional instruction, with the exception of those who watched all the programs. The fact that this feeling was strongest among those who had watched least or not at all suggested that there were a large number of teachers who might be very difficult to bring into the audience, because they were sceptical about the usefulness to them of televised instruction. Fortunately, we also had tried to find out what kind of instruction the teachers might want as a complement to televised instruction, which might provide a key to making television more acceptable to all the teachers. This is feedback for project planning, and the approach we used could be adapted to a variety of situations in which the needs or wants of the potential audience must be explored so that as big an audience as possible can be obtained. For this reason, we give it special attention here.

For this purpose, we included in the survey a check-list on the kinds of complementary instruction the teachers might want. This was the check-list:

> Which of the following activities in addition to the televised instruction for teachers do you think would help you to learn more from such a course -- for example, the televised course for teachers on "modern math"?
>
> _____ Discussions with other teachers on course content.
>
> _____ A Teacher Guide, such as was used with the modern math course.
>
> _____ Special printed material in addition to the Guide.
>
> _____ Special problems and exercises for additional private practice.
>
> _____ Opportunity to ask questions of an expert in the subject.
>
> _____ Participation in a meeting or class led by an expert in the subject.

This seemed to cover all the feasible possibilities. What did the results tell us? They showed which of these the teachers wanted most. In this case, it showed that what the teachers wanted most was some exchange with an expert, or feedback on their understanding, about the course content. This provided a basis for new planning on televised teacher instruction.

By carefully analyzing the data, we also found that discussion sessions -- a form of self-generated "grassroots" feedback -- were considered to be on a par with feedback from an expert by those who had given them a try. These results are reported elsewhere (see Part VI, this report). This, too, provided a basis for new planning.

How Such Feedback Can Be Obtained

The Questionnaire: The questionnaire was brief, and took only a few minutes to complete. This helped provide an excellent return -- 1,341 questionnaires, or over 90 per cent of the sample. Since the kind of information wanted was clear, it was easy to construct simple objective questions which the teachers found easy to answer. The questionnaire, in Spanish and English, appears in Appendix B.

The Sample: Such a survey does not have to cover the entire geographical area reached by the project. Our survey included only Bogota and Cundinamarca. It seemed reasonable to think that teachers elsewhere would want much the same things from televised instruction. Moreover, in our more detailed analysis we were interested in the relationships between the attitudes and preferences we measured. Although the strength of these might be somewhat different in various areas, it did not seem likely that their relationship to each other would be vastly different. However, as with the surveys on the pupil courses, it is important that the sample be as unbiased as possible. We attempted to avoid bias by covering one geographical area thoroughly. We did this, because we found it convenient to distribute and collect these particular questionnaires through school officials, upon whom we could not impose to follow the careful procedures for selection of respondents which a smaller sample would have required. If we had had to do so, we could have reduced the sample by about half (from about 1,200 to about 500) by using the same method in a smaller area. With a carefully drawn sample, and control over selection of respondents to insure that the sample selected was the one actually followed, as few as 200 would probably have been sufficient.

The Surveying: School supervisors, each responsible for a zone with many schools, distributed the questionnaires and arranged for their pick-up. This was arranged by the Colombian Director for Educational Television. Without this cooperation, the survey would have been impossible except on a very restricted scale. This is a good example of the greater power which feedback research can attain when host country officials become sufficiently interested in it to help.

Use of Measures of Instructional Effectiveness for Feedback on Televised Instruction

We used tests covering course content to obtain feedback on the instructional effectiveness of the televised instruction for both pupils and teachers. The results of these studies are reported elsewhere (see Part VI, this report). Here, we would like only to make a few comments on the special advantages, problems, and some of the procedures we found successful for this kind of feedback.

The advantage of tests lies in the different kind of data they produce. They measure achievement, or amount of learning. This is quite different from attitudes. Although the two usually are correlated, it is quite possible for considerable learning to take place even in the face of very negative attitudes toward the techniques of instruction used. The true instructional effectiveness of a course can only be measured by achievement testing. Attitude measurement is not a substitute for it, although under certain circumstances it may produce more immediately useful feedback.

There are many problems in testing for feedback to the ETV Project. Many of these are not encountered by the individual teacher who designs his own test in order either to evaluate class progress as a whole or to rank pupils for the giving of grades. Since most people have had experience only with this kind of testing, they often naively advocate such testing for feedback. Among many factors, these special problems stem from the ETV Project's newness, its need to produce a great quantity of televised instruction in short periods of time, and the breadth and diversity of its televised curriculum.

First, there is a requirement common to all testing. There must be a clear _criterion_ for test construction. However, in a program such as the ETV Project, this is likely to involve a much larger number of people than the single classroom teacher who need make up only his own mind about what is important -- planners, television teachers, directors, and others. What is the course supposed to teach? What are its goals? Are they limited to content, or do they include habits of thought, creativity, or other mental processes? The production of lively television does not by itself insure that anyone connected with it has a clear idea about its _educational_ goals, much less that all connected with it agree on them. Second, there is another requirement common to all testing. This is the establishing of some sort of standard or _baseline_ by which to evaluate the results. An individual teacher may set an arbitrary score, or if he wants to give grades, merely rank the scores and assign grades as he sees fit -- using, in effect, the score of one pupil as a standard for evaluating the score of another. When instruction is completely new, there is no experience on which to base an arbitrary standard, and the ranking of pupils or classes contributes nothing to evaluating the effectiveness of any kind of instruction. As a result, it is necessary to test pupils who did not receive the instruction in question in order to find a baseline. This has a troublesome consequence: the number of tests which must be administered is markedly increased for any of the results to be meaningful. Third, testing for feedback on an entire curriculum requires that the coverage include all the courses. Unless some variable other than exposure to the course is included in the research design, the results only tell something about the effectiveness of the courses on which testing takes place. It was for this reason that we included the amount of help provided the teacher by the utilization Volunteer as a variable in our testing during the project's first semester -- in order to get information of more general application than the effectiveness of the specific instruction being given at that time. Fourth, tests must be written. When results are to be used for the evaluation of instruction, test construction must be done carefully, and takes time. Items which are ambiguous, irrelevant, or too easy or too difficult must be avoided. The more courses for which tests are needed, the larger the job. Fifth, tests must be carefully administered. The interpretation of evaluative tests depends on the assumption of common testing conditions. Again, the more courses and classes involved, the larger the job. Sixth, tests must be produced and distributed in quantity. In a developing country such as Colombia, this is apt to remain a permanent challenge to any testing program, no matter how many other problems are solved. Equipment and services are likely to be unreliable, and transportation chancy. There is no solution except a readiness for crises.[5] Seventh, tests must be corrected and the results analyzed. Again, the more courses and classes involved, the larger the job.

The magnitude of these problems, and the numbers of people likely to be necessary for their solution, depends on the number of courses in the curriculum. In the ETV Project, 10 courses were telecast for pupils the first year, and 15 the second. Under the best of circumstances, then, two classes would be required for each course for testing -- one for the baseline, and one for the televised instruction. However, this would assume the perfect matching of the abilities of the classes and, given the format of the televised instruction in which the classroom teacher gives 30 minutes of teaching for every 15 minutes of television, of teachers, too. This would be necessary to avoid the inherent superiority of one or the other at the start, thus destroying the utility of the results for comparison. Matching is extremely difficult without other test results on which to base it. The only solution is to divide the classes to be tested into the two groups on a random basis, so that a superior class or teacher has an equal chance of being tested for the baseline or the instruction itself, and to use considerably more than one class for each, so that there is a good chance that superior classes will be distributed equally among the two. This means that all the classes to be used must be selected before receiving the instruction. Otherwise, those receiving television would have no chance of being in the baseline group. This requires long range and extensive planning, and the cooperation not only of teachers, but of school officials. When four or more classes are used for the baseline and the televised instruction for each course, the operation becomes elephantine. With 10 courses, this would mean 80 classes -- or about 2,500 pupils; with 15 courses, 120 classes -- or about 3,800 pupils. If another variable is involved, another set of classes must be added to represent it, and this increases the number of classes and pupils by 50 per cent. Thus, our design for testing in the first semester of the project involved four conditions with all 10 courses equally involved, and about 8,500 pupil tests were given.

The problems are not insoluble. However, they are not small. Testing for feedback for the televised instruction as a whole demands extensive resources. Moreover, it does not produce tests which can be used again if the curriculum or instruction is changed. Since the job is too large to undertake regularly, such testing is best reserved for strategic periods when the results might be of most use in affecting planning for course revision. It is most useful when another variable in addition to the televised instruction can be covered in the same design. Testing can also have a special value when some new kind of instruction is added to the ETV curriculum and has the status of a pilot effort, and its continuance or emulation is apt to rest on belief in its results. Moreover, in such a case, evidence of effectiveness may help to increase the number or motivation of participants. This was the case with the first cohesive course telecast for the in-service training of teachers, which consisted of 17 half-hour telecasts called

"Mathematics for Teachers." Because only one course was involved, and because there was agreement among its producers on its primary goals, testing was feasible. As it turned out, it was also possible to test so as to get information on the effects of other variables in addition to the effectiveness of the instruction.

As to the techniques for testing, we found that objective multiple choice items worked very well, despite the pupils' lack of familiarity with them. We also found that cheating, which is considered to be extraordinarily common in Colombia, did not affect class averages, although it may have distorted individual scores within each class. We did find, however, that a few teachers, either because of inexperience or a desire to see their class do well, could not be relied upon to administer tests without giving help. As a result, it was necessary for someone, such as a utilization Volunteer, to monitor teachers when tests were given. We also found that most teachers would readily make their classes available for testing, and that many welcomed the tests as an instructional aid. As soon as it was known that we were giving tests, dozens of teachers not included in the design asked for copies to give to their own classes.

Testing on a modest scale can also be useful under certain circumstances. Some of the less involved ways of using tests for feedback are discussed later (see Part III, this report).

In sum: Testing to evaluate the effectiveness of instruction, such as that televised by the ETV Project, provides information that cannot be obtained in any other way. However, it is likely to be a large and demanding job. It requires considerable expertise, and is most useful under special conditions -- when effects of other variables in addition to the televised instruction can be included, or a special pilot course of some kind is under study. Because tests on courses become outmoded when the course changes, testing does not supply tools which can be used again and again when courses are being frequently revised, as they have been in the ETV Project. For this reason, no tests are reproduced in this report.

Part II: Feedback on the Effectiveness of the ETV Project in the Schools

From the first, the ETV Project was concerned with its receiving network -- the actual use of the televised instruction in the schools. One of the shortcomings of Colombia's two earlier efforts to introduce televised instruction into the primary school, undertaken without outside assistance, was that little attention was given to the teacher or the school. The Peace Corps project attempted to remedy this by assigning a large number of Volunteers to work in the schools with the teachers. These Volunteers were called "utilization" Volunteers, because they were concerned with the use of television. During our two years of research, the number of Volunteers working in various phases of the ETV Project ranged from about 65 to about 85. Of these, slightly more than half to two-thirds at any one time were in utilization. At first, it was thought that these Volunteers could devote most of their time to instructing the teachers in building their teaching around ETV, and in more up-to-date teaching methodology. Soon, it became clear that they had to be equally concerned with a multitude of other things if the ETV Project were to be a success -- winning and maintaining teacher approval for the project itself, reorganizing the school schedule around the ETV schedule, obtaining adequate conditions for TV viewing, and often overcoming serious barriers to the mere reception of television -- poor wiring, irregular electrical service, and the like.

We did a great deal of research concerned with the state of ETV in the schools, and the impact of the Volunteer utilization program. This research is reported fully elsewhere (see Part VI, this report). Here, we will only outline some of the procedures we used which can help in evaluating project progress, planning, and the assignment of Volunteers. We will deal with three topics in turn -- feedback on the state of the schools or receiving network as a whole, on the state of the receiving network in various areas, and on individual schools.

Feedback on the Receiving Network as a Whole

We used the same surveys in which we obtained information on teacher attitudes toward the televised instruction for pupils to learn about the state of the ETV Project in the field. Because each Volunteer had to adjust his own schedule to what he perceived as desirable, we were interested in the actual frequency of Volunteer contact with teachers, as well as with the effects of that contact. We found this question to be useful on Volunteer contact with the individual teacher:

> On the average, how often did you converse with the Peace Corps Volunteer about utilizing the televised instruction effectively when he visited your school during the past semester?
>
> _____ twice a week _____ once a week _____ once every two weeks
>
> _____ less than once every two weeks _____ rarely

And in regard to the Volunteer visits to the school, this question:

On the average, how often has the Peace Corps Volunteer visited your school in regard to the ETV Project during the past semester?

_____ twice a week _____ once a week _____ once every two weeks

_____ less than once every two weeks _____ rarely

In regard to the teachers' opinions about the effectiveness of the Volunteer, we found these items to be useful:

In regard to the advice about teaching that the Peace Corps Volunteer has given, would you say that it has been: (Mark one).

_____ His advice is usually not very good.

_____ His advice may be good, but it is not sufficiently clear to put it into practice.

_____ His advice may be good, but I do not have the necessary material to put it into practice.

_____ His advice is good and can almost always be used.

In what ways do you think the Peace Corps Volunteer could be better trained or prepared in order to help you use television better in your own teaching? (Check all that apply. If none apply, check none.)

_____ Speak better Spanish.

_____ Know more about methods of instruction.

_____ Know more about the problems of teachers.

_____ Supply more teaching materials -- audio-visual aids, equipment, paper, books, tools, etc.

Would you say that the Peace Corps Volunteer has given a great deal of help, some help, little help, or no help in your use of the televised courses in your own teaching?

_____ No help _____ Little help _____ Some help _____ A great deal of help

In regard to the teachers' opinion of televised instruction, we asked:

> Do you think television can give a great deal, some, little, or no help in reinforcing your own teaching?
>
> _____ None _____ Little _____ Some _____ A great deal

The replies of hundreds of teachers to these questions gave a useful picture of the state of the project in the schools. For example, the replies about Volunteer school visits and conversations with teachers provided a description of the actual functioning of the Volunteer utilization program. It showed that many teachers had little or no contact with Volunteers, including some in schools which Volunteers visited frequently -- a fact obviously important that might otherwise have been overlooked.

How can the data from opinion questions -- such as those on the helpfulness of the Volunteer or of ETV itself -- be used? Since there is no ambiguity about which replies reflect the most favorable teacher outlook, the trend of these over time can provide a measure of progress, and increasing them can be taken as a goal. Perhaps more important, a very large per cent in the less desirable categories would constitute a danger signal calling for new strategies. In addition, they give a picture of what the teacher is thinking, so that action can be fitted to needs. For example, questions on what the teachers perceive to be the Volunteer's weakness can guide Volunteer training, or lead to information campaigns to clarify the Volunteer's role -- as, for example would be called for by a proportion seeking teaching aids and equipment from the Volunteer, whose role was supposed to be limited to advice and instruction. However, the utility of these questions is limited when results for the project as a whole are examined. This is because it is a matter of judgment or a guess, however educated, as to just what distribution might reflect effective operation. These kinds of questions are most useful in feedback when results for various areas or zones of operation are compared, so that the results for all or one can be used as a criterion for evaluating those in another. This kind of approach is discussed in the next section.

We also tried to find out more about the problems teachers had encountered in using television other than those directly concerned with teaching methods. The utilization Volunteers appeared to be spending most of their time on these, and their seriousness clearly had been underestimated at the start of the project, for their solution had not been part of the Volunteer's role initially. To find out more about these problems, we constructed a check-list to include in our questionnaires.

We based this check-list, which we called an "inventory of school problems," on hundreds of actual accounts of difficulties encountered in the schools. During the third semester of the project (February-June, 1965), we collected some 300 "critical incidents" by way of a problem diary from Volunteers. Each dealt with a separate problem the Volunteer had had to deal with. From these, and from less formal reports from Volunteers, teachers, and school officials, we compiled a lengthy catalogue of school problems. We grouped these by kind of problem. Next, we developed items which covered each kind of problem. The result was a 14-item check-list of school problems. In order not to tire the teacher with a single long check-list and thereby impair the accuracy of the results, we divided the 14 items into two separate check-lists. In one we placed those items concerned with the conditions in which the pupils actually watched the television. For convenience, we called these "ETV viewing room problems." In the other we placed those items concerned with difficulties in easily making the television available to the pupils -- problems of schedules, school organization, TV set operation, electricity, and the like. We called these "general" problems.

The check-list for ETV viewing room problems was this:

> In regard to the room where the children watch the televised courses, which of the following has been a problem in your class during the past semester? Check all that apply. If none apply, check none.
>
> _____ The room is not dark enough.
>
> _____ There are not always enough seats and benches for all the children.
>
> _____ The TV set is not located in a proper place in the room so that all the children can see it.
>
> _____ There are so many children in the room that many cannot sit comfortably or watch undisturbed.
>
> _____ Frequently, there is interference from outside noise in the television room.
>
> _____ Although there is no interference from outside noise, the children often are unable to hear the sound clearly because reception is bad.

The check-list for "general" problems was this:

> Which of the following difficulties have you encountered in using television during the past semester? Check all that apply. If none apply, check none.
>
> _____ The classes are not able to change from room to room efficiently, and there is much confusion, so that much time is lost.

_____ The electricity often fails.

_____ Although the electricity is good, the TV set often does not work.

_____ The TV set is so complicated that although it works, it is difficult to adjust for clear image and sound.

_____ The television schedule conflicts with recreation periods.

_____ There never seems to be sufficient time before and after the televised programs for the appropriate "motivation" and "follow-up".

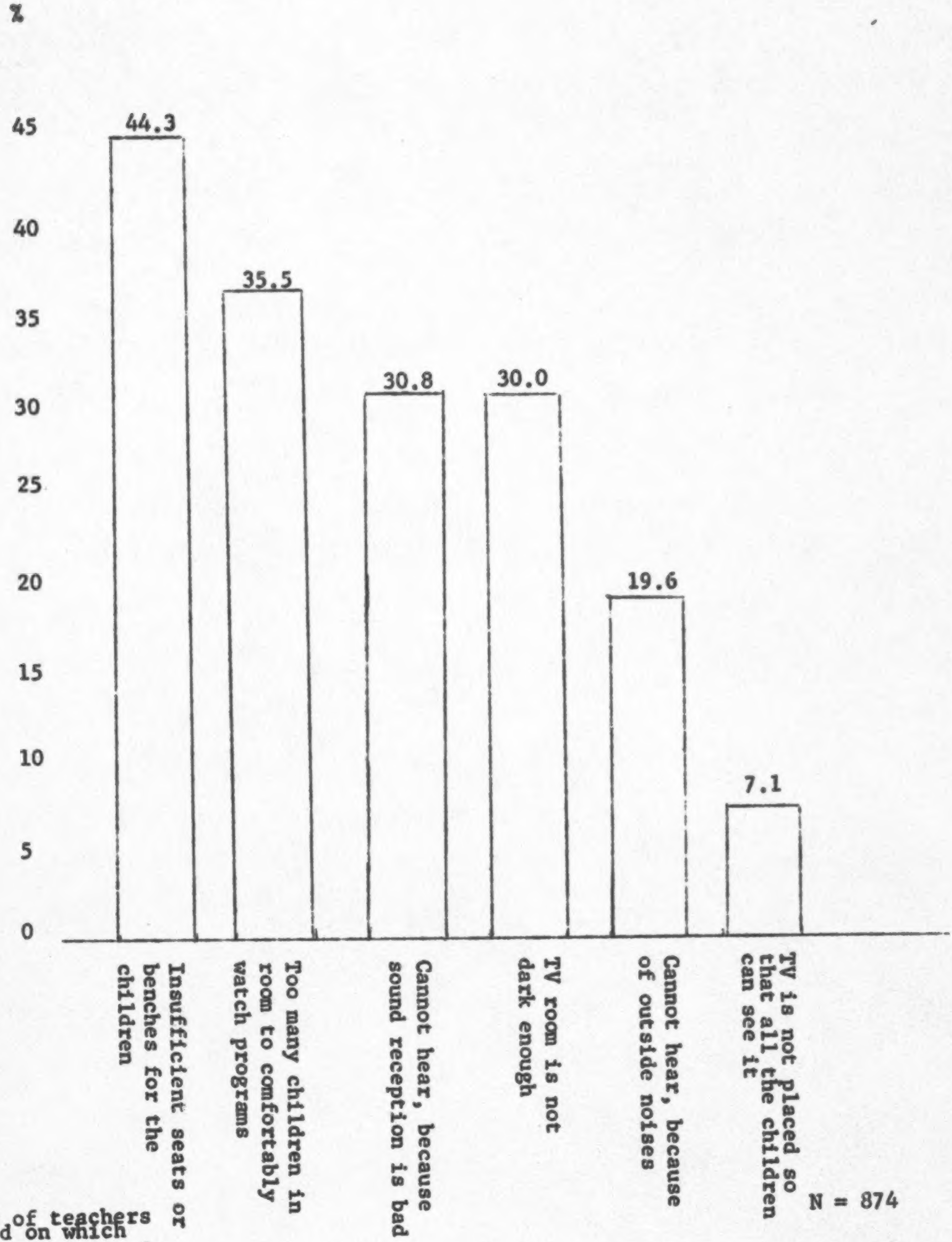
_____ The television schedule conflicts with religious activities.

_____ The television programs make the children undisciplined.

Of course, the construction of the check-list itself provided information on the *kinds* of problems the teachers were experiencing. And the "critical incidents", on which they were largely based, also provided a rich source of information on the utilization Volunteer's job, the people with whom he had to deal, and *his* problems and frustrations. The teachers' replies to the check-list indicated the *frequency* of each *kind* of problem. Thus, it was possible to find out just which problems were troubling the project most. This kind of information makes it possible to encourage and guide Volunteers toward finding the best solutions for their teachers. Examples of the kind of results obtained appear, for ETV viewing room problems, in *Figure 10:4*, and for "general" problems, in *Figure 10:5*, both bar graphs.

It is important to distinguish results of this kind, and those on Volunteer contact, from replies to opinion questions. Any reply, of course, is partly conditioned by the temper and personality of the respondent. However, questions of this kind demand reports of actual events, and in that sense, they reflect reality. However, like the opinion question results, they are even more meaningful when looked at by area or zone of operation. This approach is discussed in the next section.

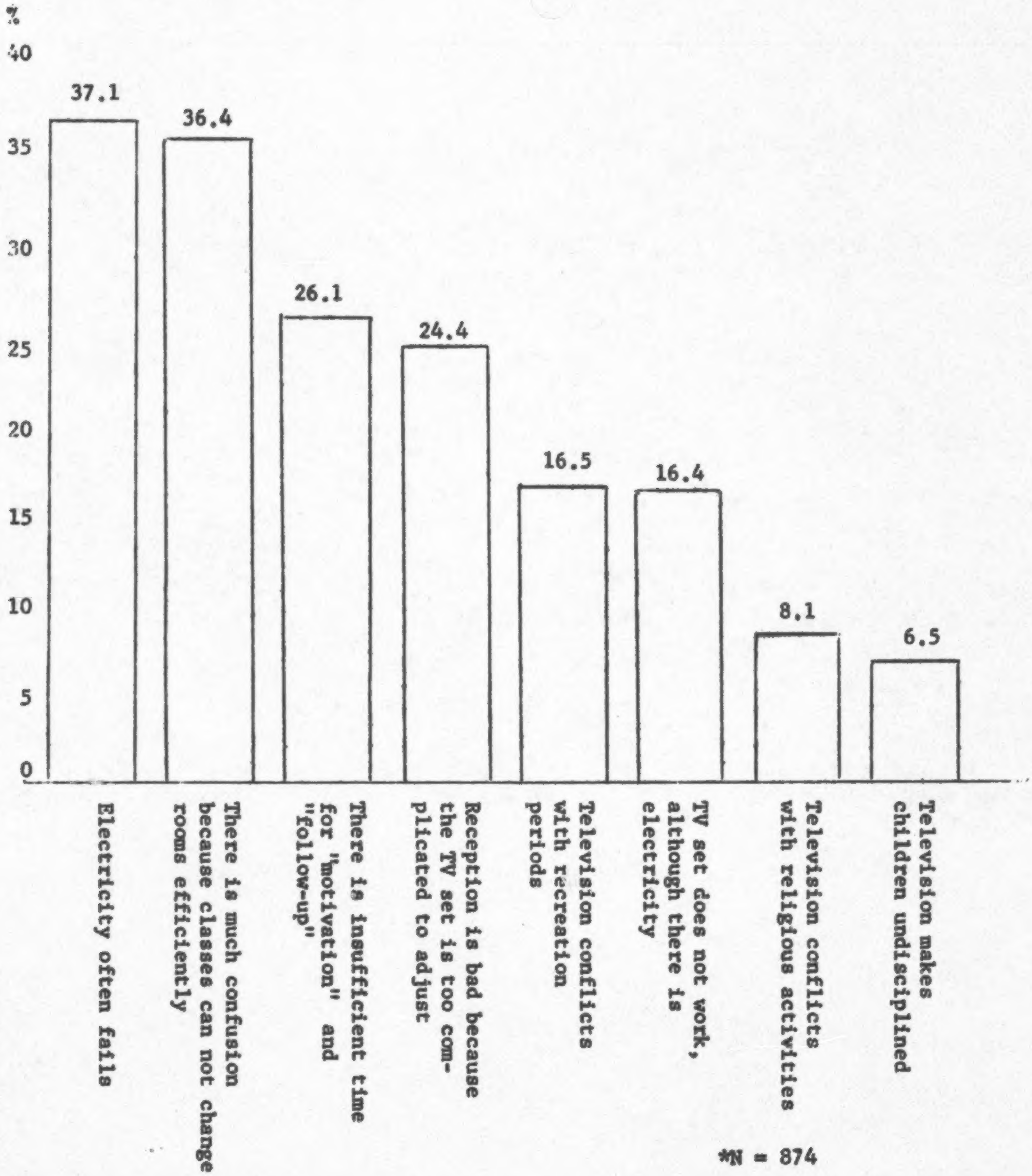
Figure 10:4: **Factors in the ETV Viewing Room that Interfere with Television Instruction.** (Data from first semester, 1965. Per cent of teachers reporting each of these interferences.)



N = 874

*Number of teachers surveyed on which per cents are based

Figure 10:5: General Factors that Interfere With Television Instruction: (Data from first semester, 1965. Per cent of teachers reporting each of these interferences.)



*N = 874

*Number of teachers surveyed on which per cents are based.

Feedback on the State of the ETV Project in Various Areas

As the ETV Project expanded its network of schools, it became more and more important to evaluate its progress in the various areas. Volunteers were always unevenly distributed, being concentrated either in the newest areas or where further attention seemed necessary. Dependable information on the state of the project in each area permits one to be compared with another. As a result, scarce resources -- Volunteers, and administrative attention -- can be distributed where they are most needed.

We found that the replies to the various questions presented in the preceding section provided a useful basis for comparing areas. Of course, the areas must be sufficiently homogeneous and identifiable so that something can be done about them if the data indicate that this is desirable. By the end of the project's second year, there were at least nine such areas.

What does such data tell us? An example in regard to Volunteer contact is shown in Table 10:2. Of the five areas, clearly two were receiving less Volunteer contact than the others. An example in regard to teacher satisfaction and opinions about the Volunteer's work is shown in Table 10:3. Clearly, teacher satisfaction was not uniform.

Probably, the check-list provides the most useful data of all for area evaluation. An example of four items and five areas is shown in Table 10:4. Here, it is clear that certain areas had an unusual number of problems. These are where more Volunteers, or changes in the operation of the project, are most needed.

Table 10:2: Frequency of Volunteer Contact for Selected Areas. (Data from second semester, 1965.)

Area:*	A	B	C	D	E
Frequency of school visits:**					
Once a week or more often	64.9	37.9	36.3	8.1	13.0
Less than once a week	35.1	62.1	63.7	91.9	87.0
Total:	100.0	100.0	100.0	100.0	100.0
***N=	174	153	171	112	308

*Each letter stands for a different area. Since this is only an example of the kind of data this sort of analysis leads to, the areas used are not identified by name.

**In this example, teacher reports of school visits is used as an index of frequency of Volunteer contact with teachers. The use of teacher reports of conversations with the Volunteer as an index would show the same relationship among the areas.

***Number of teachers responding to item on which per cents are based.

Table 10:3: Satisfaction with Volunteer Help for Selected Areas. (Data from second semester, 1965.)

Area:*	A	B	C	D	E
Per cent saying Volunteer gave: "Great help"	63.3	49.4	41.3	31.1	20.3
Less than "Great help"	36.7	50.6	58.7	68.9	79.[illegible]
Total:	100.0	100.0	100.0	100.0	100.0
**N=	180	160	172	180	320

*Each letter stands for a different area. Since this is only an example of the kind of data this sort of analysis leads to, the areas used are not identified by name.

**Number of teachers responding to item on which per cents are based.

Table 10:4: ETV Viewing Room Problems and General Problems for Selected Areas. (Data from first semester, 1965.)

	Area:*				
ETV Viewing Room Problems:	A	B	C	D	E
TV room is not dark enough	13.8	30.2	21.4	47.4	37.0
Cannot hear because sound reception is bad	16.5	9.9	23.0	42.1	28.2
General Problems:					
There is much confusion because classes cannot change rooms efficiently	19.1	20.9	21.4	40.0	38.7
Reception is bad because TV set is too complicated to adjust	8.5	10.5	20.3	36.3	18.2
**N =	188	172	187	190	341

*Each letter stands for a different area. Since this is only an example of the kind of data this sort of analysis leads to, the areas used are not identified by name.

**Number of teachers responding to item on which per cents are based.

How Such Feedback Can Be Obtained

The Questionnaire: The questionnaire was of the self-completion type, with clear-cut items calling only for the checking of alternatives. Useful feedback can be provided by a very few items. In our surveys, the same questionnaire, in addition to a variety of other items, also included the questions to determine teacher attitudes toward the televised instruction for pupils. The questionnaire, in Spanish and English, appears in Appendix C.

The Sample: Unlike the sample required for the evaluation of a set of stimuli, such as the televised courses for pupils, this kind of feedback requires a broad sample. The reason is that its purpose is description. It can hardly describe people who are not represented. Thus, it must cover as large an area as possible. It also must be unbiased, if an accurate estimate of the true frequencies of the various kinds of problems is required. However, if only a comparison of areas is desired, then the first step is to make sure that the sampling procedure is the same for all areas. Then, any bias would be systematic -- and a systematic bias would interfere with comparison only if all responses center around the extremes.

The Surveying: The surveying procedure was the same as described for the measuring of teacher attitudes toward the televised instruction for pupils (see Part I, this report).

Feedback on Individual Schools

The great frequency of problems experienced by teachers in their attempts to use television directed our attention to the possibility of obtaining information about individual schools, so that utilization

Volunteers could be directed to those having more than ordinary difficulty. The "school problem inventory" seemed to provide a potentially useful tool. We decided to use the results of our end-of-the-year survey for 1965, the second one in which the inventory appeared, to explore the feasibility of this important kind of feedback.

Obviously, the necessary condition is that the teachers in one school tend to agree in their reporting of problems. Otherwise, it would not be possible to speak of schools in regard to problems, but only of individual teachers. Thus, we asked this question of the data produced by the check-list: "Do marked differences exist among the schools in the reporting of problems, or only among individual teachers?" If differences could be discerned among schools, then feedback on individual schools could be provided, with some singled out as having unusual difficulty.

Because we had asked teachers to write in the name of their school on the questionnaire, it was possible to analyze the check-list results on a school-by-school basis. Our procedure was this: The results for the individual teachers were grouped together by school. This resulted in a "packet" of results for each school. All schools with three or fewer teachers reporting were eliminated, in order to insure that a school's standing did not reflect the responses of too few teachers, as well as in order to provide a sufficient number of teachers for each school for some agreement or disagreement as to the frequency of problems to appear. Altogether, slightly over 200 schools met this criterion of having more than three teachers who had responded to the survey. Next, we calculated the average number of problems reported by the teachers in each school. Because the check-list was in two parts in the questionnaire, one concerned with ETV viewing room problems, and the other with more "general" problems, we calculated the average for each separately. As a result, for each school there were two "problem scores" -- one for ETV viewing room problems, and one for more "general" problems. The higher the score, the greater was the frequency of problems reported by the school's teachers. Finally, the two sets of scores were rank-ordered, from the highest to the lowest. The result was two lists of the same 200-odd schools, one ranking the schools in the order of the frequency of reports of ETV viewing room problems, and the other ranking them in the order of the frequency of reports of more "general" problems.

The results of these rank-orderings made it quite clear that marked differences did exist among the schools in the reporting of problems. That is, teachers in any one school did tend to agree as to the quantity of difficulties or problems they had encountered in adapting the school to ETV. If differences occurred primarily between teachers, then the school averages or scores would vary only slightly from school to school, for the report from one teacher of a high frequency of problems would be cancelled out by the report of a low frequency by another teacher in the same school. This decidedly did not occur. The school scores varied markedly.

The data are shown in Table 10:5. In regard to "general" problems, the range of school scores was from .20 (for example, five teachers in one school of whom only one reported one problem) to 6.00 (for example, five teachers in one school reporting among them 30 problems). For "general" problems, the maximum school score would be 8.00 (for example, five teachers in one school each of whom reported all of the possible eight problems, or 40 among them). In regard to ETV viewing room problems,

Table 10:5: The School Problem Scores for Schools With Four or More Teachers Reporting (Data from second semester, 1965)

(School Problem Score is average number of problems per teacher reported by teachers in a school.)*

Kind of Problem:	Range of School Scores: High Score	Low Score	Mean Score	Standard Deviation	Number of Schools
"General"	6.00	.20	1.78	1.031	213**
ETV Viewing Room	5.50	.20	1.48	1.025	213**

*Formula for School Problem Score:

$$\frac{\text{Total Number of Problems Reported by All Teachers In a School}}{\text{Number of Teachers}} = \text{School Score}$$

** Same schools.

the range of school scores was from .20 to 5.50; the maximum would be 6.00. For both "general" and ETV viewing room problems, the progression of school scores for the rank-ordered schools was continuous -- that is, the scores were spread out between the extremes -- and the distributions were fairly normal (bell-shaped). For "general" problems, the mean school score = 1.78, and the standard deviation = 1.031; for ETV viewing room problems, the mean school score = 1.48, and the standard deviation = 1.025.

Thus, we found that it was feasible to attempt to identify by survey those schools with an unusual number of problems. Once the schools are ordered on the basis of their school problem score, it is only necessary to select a criterion by which to set off those which might be called "high problem" schools. There are many possibilities. For example, one might take schools above the average score for all schools, or those in the top 50 or 25 per cent of scores, or simply list them all in descending order of priority for attention on the basis of their scores.

As an illustration of one possible approach, we will describe how we made up a list of "high problem" schools. First, we picked out the schools which were among the top quarter in regard to both kinds of problems. Then, we picked out those among the top quarter either in regard to "general" problems or ETV viewing room problems. Lastly, in order not to miss the schools with a relatively high number of problems, but not quite enough to make the top quarter on either list, we picked out those not yet selected which were among the top half in regard to both kinds of problems. In selecting the schools, we included all those with the same scores as those falling exactly at our criteria; as a result, the numbers of schools selected in the "top quarter" was slightly greater than 25 per cent of the total number.

In this way, we selected from the slightly more than 200 schools a list of 100 "high problem" schools for possible special Volunteer attention. There were 31 among the top quarter for both kinds of problems; 24 only among the top quarter for "general" problems; 25 only among the top quarter for ETV viewing room problems; and 20 not in the top quarter of either for either kind of problem, but among the top half for both.[6]

We treated the two kinds of problems separately for the same reason that we grouped them in this particular way in the questionnaire -- one set seemed to deal with difficulties in making the television available to the pupils ("general problems"), and the other seemed to deal with difficulties affecting viewing as the pupil sat before the TV set itself. Later, we performed a factor analysis (Varimax rotation) of the teachers' reports of all the problems. The results are fully reported elsewhere.[7] They gave some support to the logic of the way we divided the items (for example, five of the six ETV viewing room items had loadings above the cut-off established on the first of four factors extracted). However, the commonalities, or overlap in response, was generally quite low. This indicates that each item constituted to a great extent its own "factor." They were largely independent of each other. As a result, we would recommend simply combining the results for both "kinds" of problems to make up one problem score for each school were this kind of analysis made of the results of a future survey.

It will be recalled that we used only schools from which four or more teachers responded in the survey, and the problem scores were the average number of problems per teacher from each school. It was on the basis of these scores, made up of the responses of four or more teachers from each school, that we drew up a list of "high problem" schools. Would one or two teachers from each school do as well? Would the results be about the same?

This is an important issue for two reasons. First, the greater the number of teachers required from each school, the greater the number of schools which would be completely ignored simply because not enough teachers from them responded to the survey. Second, the use of reports of only one or two teachers from each school could reduce the surveying task considerably, for the sampling could be limited to just that number from every school.

We have tried to provide an answer. Basically, our approach was to draw a series of samples of less than four teachers from each of the schools included in the original analysis, make new lists of "high problem" schools from each sampling, and then compare these new results, based on fewer teachers per school, with the original results. We drew two samples with two teachers from every school, and four samples with one teacher from every school. Each sample was random and independent, and once a teacher had been drawn he was excluded from being drawn again for a sample involving the same number of teachers per school. We treated each of the new samplings just as we treated the schools in the original group. We ordered each by the two kinds of problem scores. When the sample consisted of two teachers per school, then the scores were based on the average number of problems for these two teachers. When the sample consisted only of one teacher per school, then the scores were the number of problems reported by each of these teachers. We established a "cut-off" in the same way as before, using the score of the school which divided the top quarter from the rest on each list. We then compared the resulting lists of "high problem" schools with those made up on the basis of four teachers per school.

It will be recalled that our complete "high problem" list consisted of schools falling into four different categories -- those in the top quarter in regard to both kinds of problems, those in the top quarter for "general" problems, those in the top quarter for ETV viewing room problems, and those in the top half, but not in the top quarter, for both kinds of problems. In this examination of the effects of using fewer than four teachers from each school, we have restricted ourselves to using only the schools in the top quarter of either list. This obviously includes those in the top quarter on both lists, and involves what were essentially the basic categories which we used to identify "high problem" schools.

The original list seemed a good criterion simply because, presumably, the greater the number of teachers whose reports are included in making up a school problem score, the more likely is the score to be reliable and valid. If almost exactly the same schools were selected when only two teachers per school were used, then we would conclude that two teachers would do as well as four. If almost exactly the same schools were selected when only one teacher per school was used, then we would conclude that one teacher would do as well as four. Of course, the exact degree of overlap that would be considered adequate is arbitrary.

The results of this analysis are shown in Table 10:6. We will discuss it briefly. There was a special problem, because the fewer the number of teachers from each school, the less was the possibility of distinguishing fine differences between school scores. For example, when only one teacher per school was used, schools could have only nine different scores in regard to "general" problems (zero to eight, the total number of items), and only seven different scores in regard to ETV viewing room problems (zero to six, the total number of items). With four teachers, of course, the variations in a score that was an average were extensive. This meant that when one and two teachers were used per school, the number of schools with the same score as the "cut-off" score was much greater than when four teachers were used. As a result, the number of schools included in the "high problem" lists was generally much greater when one or two teachers were used. In the table, we term this the "penalty" for using fewer teachers, because it means that more schools must be designated for special attention to achieve whatever the degree of "overlap" with the original list may be. The "overlap" itself is the number of schools on the new lists which were the same as those on the original list. The per cent of "overlap" is the per cent of the schools on the original list also appearing on the new list. Thus, the first line of the table might be read this way: "With two teachers from each school, the 'cut-off' score for 'general' problems was 2.50. Using this 'cut-off,' 63 schools were placed on the 'high problem' list. Of these, 37 were also on the original list for 'general' problems. This was 67.3 per cent of those on the original list. The 'penalty' for following this procedure with two teachers per school was that eight more schools had to be included on the list."

Table 10:6: Effects on Identifying "High Problem" Schools of Using One or Two Teachers Only from Each School for School Problem Score (Data from second semester, 1965)

Sample No.*	Number of Teachers from Each School	School Score for "Cut-Off"	Number of "High Problem" Schools Selected**	"Overlap," or Number of Schools Also On Original List	Per Cent "Overlap"***	"Penalty," or Number of Schools Picked Out in Excess of Original List****
For "General" Problems (55 schools on original list of top quarter in problem scores):						
1	two	2.50	63	37	67.3	8
2	two	2.50	61	39	70.9	6
3	one	2.00	99	34	61.8	44
4	one	3.00	55	28	50.9	--
5	one	2.00	96	36	65.5	41
6	one	2.00	90	31	56.4	35
For ETV Viewing Room Problems (56 schools on original list of top quarter in problem scores):						
1	two	2.00	78	44	78.6	22
2	two	2.00	69	40	71.4	13
3	one	2.00	89	39	69.6	33
4	one	2.00	89	44	78.6	33
5	one	3.00	51	26	46.4	-5
6	one	3.00	58	27	48.2	2

Total number of schools: 213

*Each sample was used to pick out "high problem" schools for both "general" and ETV viewing room problems.

**Schools selected were those with score equal or greater than "cut-off" score and "cut-off" score is that of school marking off top quarter when schools ordered by problem scores.

***Base for per cent is number of schools on original list made up using four teachers from each school.

****This is a "penalty" in that it is the number of additional schools that would have to be given attention if the same rules were followed.

The results are not hard to interpret. For practical purposes, the trend was the same for "general" and for ETV viewing room problems. Samplings involving two teachers per school were clearly superior to those involving only one teacher per school in matching the original list. To some extent, this is reflected in reduced overlap. However, it is most dramatically reflected in the very high penalty in extra schools which would have to be included to achieve the degree of overlap indicated when only one teacher per school was used. Thus, for "general" problems, there was about 70 per cent overlap using two teachers per school, with a penalty of six to eight schools; using one teacher per school, the overlap ranged from about 50 to 66 per cent, and the penalty for the three samplings with the highest overlap ranged from 35 to 44 schools. When the penalty was negligible for samplings of one teacher per school, the overlap also was relatively low.

In our judgment, one teacher per school would not be adequate. Two is feasible, although we would have preferred a higher degree of overlap. Three or four certainly would be better. As a working procedure, we would recommend the same criterion we used -- four or more teachers from each school -- for establishing an initial list of "high problem" schools, whatever system is used to pick these schools out. Then, in order not to overlook any schools simply because not enough teachers from them responded, we would suggest basing a score for each of the schools not included in this initial analysis on as many teachers (one, two, or three) as responded. Then, all schools could be added to the "high problem" list which had scores equal or greater than the score established in the initial analysis as the "cut-off." Undoubtedly, this would mean that some schools would be placed on the "high problem" list which might not be there if their scores had been based on a greater number of teachers. However, this risk would only be particularly great for those with only one teacher responding, and it would avoid ignoring schools simply because too few teachers responded. Moreover, the list made up from the initial analysis would be based on reasonably reliable and valid scores, and the "cut-off" also would have been established on the basis of such scores.

How Such Feedback Can Be Obtained

The Questionnaire: A self-completion questionnaire was used. The check-list was simple and clear-cut. Because of other research interests, the questionnaire contained many other items. However, feedback on the schools could be obtained with a simple one-sheet form. Obviously, it is necessary that there be some way to identify from what schools returns come (for the form we used, see Appendix D).

The Sample: In a survey for school feedback, the range of the sample is very important. Obviously, nothing can be found out about a school unless a questionnaire is returned from it. Unlike the surveys on attitudes in regard to the televised instruction for pupils, a survey of this kind is only as useful as the geographical range it covers. Of course, there is no reason why one area at a time could not be covered, and the results treated separately. Under this system, each area could perform its own feedback on the schools, using a standard form prepared and printed for the entire project.

The Surveying: As with all our surveys concerning teacher attitudes toward the televised instruction for pupils, the questionnaires were delivered by Volunteers with a stamped, addressed envelope for return by the teacher.

__Processing__: Almost all our analyses of survey data were done by computer. For the schools, each was assigned an identification number. When the responses had been coded and punched on cards, those from the same school could be grouped together by number. The use of cards permitted manipulation of the data, such as the cross-tabulating of responses to different items, for a multitude of research purposes. However, if the goal is only to obtain information on schools (or for areas), the results could easily be tabulated by hand. The returned questionnaires could be grouped by area, and returns from the same school put together within each area, followed by the tallying of responses and the ordering of schools by their "scores." The last step would be choosing some arbitrary criterion or score identifying those falling above as targets for greater Volunteer attention.

__Part III: Other Techniques for Feedback__

Feedback is so important that it should not be ignored simply because a lack of people or expertise in research prohibit it on a large scale. There are many ways in which an undertaking such as the Peace Corps ETV Project in Colombia can obtain feedback -- and useful and important feedback -- which do not require extensive resources. We would be remiss if we did not discuss those which in our opinion hold the most promise for the ETV Project.

Before discussing specific techniques, we would like to make a few general comments which apply to all. We would like to emphasize that feedback is information, and information is only useful if it has some meaning for those who try to learn from it. Many efforts at feedback fail because little thought is given to exactly on what feedback is desired. Piles of information are gathered, and they remain no more than that -- heaps of uninterpretable facts, comments, test scores, and anecdotes. Good feedback requires that it have a clear focus or purpose. This should dictate what kind of information is gathered and how it is gathered. Good feedback also requires that it be as accurate as possible. This means that it should be collected in some systematic way, as a guard against bias. Feedback is also only as good as its dissemination to those whom it should inform. Ideally, then, any effort at feedback should include from the start a plan for the thorough review and discussion of the results and their application.

Some of the techniques which the ETV Project might use to obtain feedback on the televised instruction are:

Systematic Interviewing of Teachers. It is common for the people in any project to focus on the physical or readily visible products of their work. As a result, they often lose sight of what these products may mean to those for whom they are intended. One way those concerned with the production of the televised instruction -- television teachers, directors, and others -- could obtain useful information on their successes as well as their failures is simply by talking to teachers. However, these talks are likely to be most profitable if they have a common and clear focus, and include a broad range of teachers. As a result, they should be preceded by decisions on what is to be learned from the teachers. The best way to insure that this step is not overlooked is to draw up an outline of topics or questions in advance, which can be supplemented on the spot as the interviewing progresses. There should also be some sort of modest sampling, to make sure that some points of view will not be overlooked. There is no reason why the producers could not spend a few days at the end of every semester to talk with 20 or more teachers about the televised courses they have turned out.

Such interviewing can be most useful when it supplements more comprehensive feedback, such as that provided by a survey. The results of a survey can provide some focus to the interviews -- that is, the survey puts the problems for each course in perspective, so that the producers are better prepared to find out in detail, in their own terms, just what the teachers think. Moreover, the list of respondents to a survey can be used to sample from for interviewing. When teachers can be identified as being more or less favorable toward a given course, as they can through the kind of questions we used, interviewing can be limited to those less satisfied. As a result, the producers are brought into direct contact with those who are making the complaints.

School and Class Visits. These differ from interviewing teachers in that the number of teachers which could be covered in a given time is less, and that interest would be centered on the actual behavior of teachers and pupils in response to the televised instruction. By watching classes in session, producers could see which of their techniques fail as the consequence of actual conditions, and what kind of "motivation" and "follow-up" their televised instruction leads to. This would be particularly important when innovations are made -- such as new television techniques for promoting class participation, or new ways of presenting material. They could see for themselves whether these have the desired effects. And they could talk to a few pupils in depth, to find out whether their schemes have had the intended impact.

Like the interviewing of teachers, these visits should have some focus or purpose. These should be outlined in advance. And, like the interviewing, there should be some effort at sampling, in order to . . .

avoid bias. However, unlike the interviewing of teachers, they must be undertaken while the televised instruction is in progress. Thus, they are probably best reserved for occasions when some particular issue, such as an innovation in the instruction, is in question.

Testing With a Limited Goal. Testing on a comprehensive scale requires extraordinary effort, as outlined previously (see Part I, this report). However, useful testing can be done on a limited basis. The requirement is that there be a clear-cut goal in mind. Thus, producers could set an arbitrary goal for a program, and test one or two classes to see if they achieved it. For example, they could simply list what they felt the children should learn from the instruction, translate these into test items, and after the telecast administer the test. This would have two important advantages. It would force the producers to consider their goals in terms of instruction, rather than "show biz," and it would give them some idea as to whether they were reaching them. These goals might be limited to the learning of content, or might include more ambitious issues -- such as the ability of the pupils to transfer learning about some specific relationship to another context. And there is a third advantage to this kind of undertaking. Setting forth goals and drawing up a test would give project administrators an opportunity to appraise the goals entertained by the producers -- a not always easy task when 30 or more programs are being telecast each week.

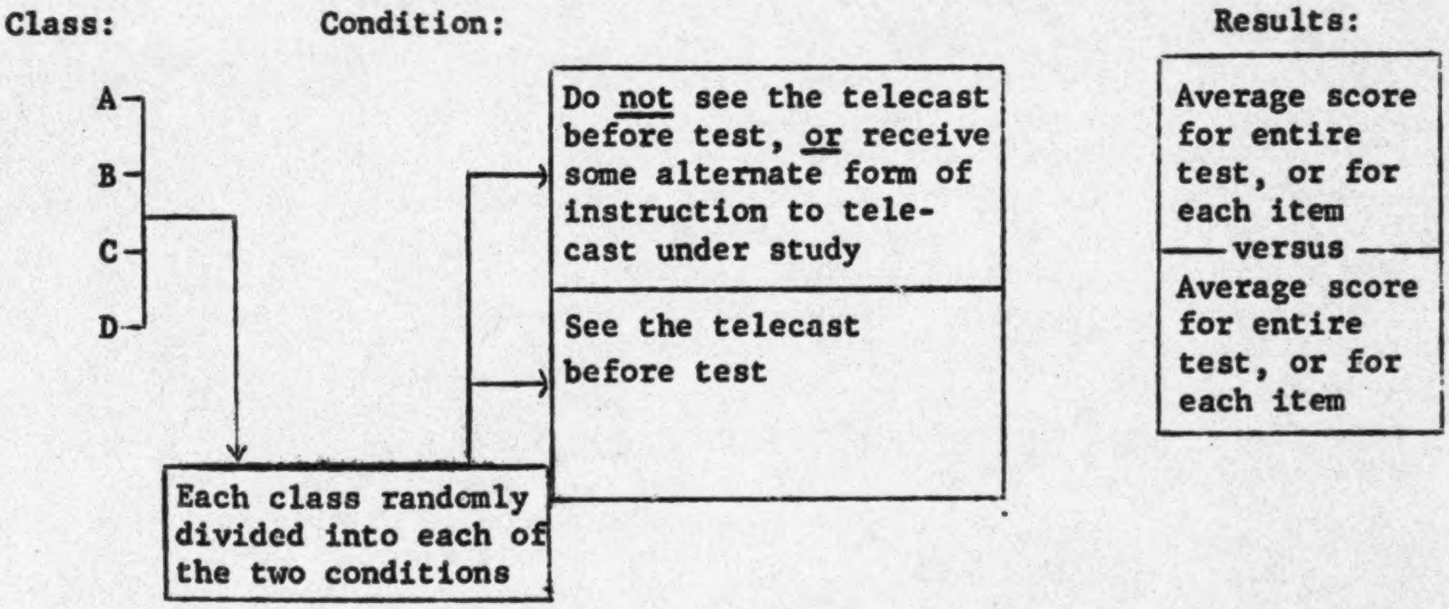
Like school and class visits, such testing can be most useful when some innovation is introduced into the instruction. However, like school and class visits, it is likely to be useful under any circumstances. Again, the classes involved should be drawn by chance from the population of classes available, to avoid bias.

An ETV Laboratory or Workshop. This is more ambitious than any of the previously discussed techniques. It would involve setting up a system for viewing selected programs prior to their being telecast generally, in order to assess their effectiveness. Either special rooms at the ETV studios or selected classrooms in schools could be used. The transmitter, also used for commercial telecasting in the evenings by Colombia's Instituto de Radio y Television, usually remains on from the beginning of ETV telecasting in the morning through the end of commercial telecasting near midnight. There are some unfilled periods, and these could be used for these trial programs.

This would systematically combine most of the benefits of class visits with those of testing on a limited scale, and would provide a basis for the revision of telecasts before use. It is clearly most recommended when innovations are introduced. However, it would be useful under any circumstances. Moreover, it has an additional advantage, for an objective baseline by which to evaluate test results could be obtained by testing half the pupils before they see the telecasts, and half afterwards. On each test item, the before results would serve as the baseline. Of course, this could also be done in conjunction with class visits, but the lack of control over environment in the school is apt to frustrate many attempts. With an ETV Laboratory, the situation would be controlled so that the testing could be done easily; moreover, tests could be given to pupils individually and they could be interviewed, if desired.

The system is not limited to comparing exposure with non-exposure to a particular telecast. It can also involve the comparison of alternate presentations of the same material. Thus, one half of the pupils would see one form of the instruction, and the other half would see another form, with both receiving the same test afterwards.

Once established, such a system would permit more ambitious evaluation. Thus, several classes could be involved at once, and several programs could be evaluated in one day. Whatever is done, the pupils should be divided randomly among the conditions. This cannot be left to the teacher, for he is apt to make a guess as to which condition is most important, and put his best pupils in it. An easy solution is simply to alternate assignments as the pupils are lined up by the teacher after arriving at the place of viewing. The scheme, with four classes and two programs, can be illustrated this way:


Class:
Condition:
Results:
A
B
C
D
Do not see the telecast before test, or receive some alternate form of instruction to telecast under study
See the telecast before test
Each class randomly divided into each of the two conditions
Average score for entire test, or for each item
versus
Average score for entire test, or for each item

If an alternate form of instruction is involved, the design can be expanded to also include a baseline for non-exposure to either form of instruction simply by dividing each class into three groups, and testing one which has seen neither form, and the other two after each has seen one of the forms.

Of course, pupils could also simply be tested before and after seeing instruction. If only one form of instruction is involved, the before scores are simply compared with the after scores. If there are alternate forms, the differences between the before and after scores for each group are compared. However, this system may disguise the effectiveness of the instruction because once pupils have answered a question, they may merely try to remember what they said before. Thus, differences may be decreased because some pupils become "fixed" on wrong answers. This problem is apt to be especially severe when only a few minutes separates the two testings, as would be the case here.

Properly, this kind of procedure should involve statistical tests to evaluate whether differences which occur should be taken seriously, or attributed to the inevitable variations due to chance. However, the techniques are simple, and would be the same for repeated applications of the same design. Anyone could apply them after simple instruction by someone qualified in research.

Some of the techniques which the ETV Project might use to obtain feedback on the use of television in the schools and the Volunteer utilization program are:

"Critical Incidents." We have so far discussed this technique only in regard to its use in constructing questionnaire items because our other uses of it are fully described elsewhere (see Part VI, this report). It consists of gathering reports of actual problems encountered by workers in order to see clearly the kinds of difficulties they face, the kinds of people they really work with, the milieu in which they work. Presumably, this can lead to superior training for future workers, more informed direction of the present workers' activities, and a better grasp of the problems of the project.[8] In our use of this technique, we asked utilization Volunteers to maintain a problem diary over a period of several weeks, and to report each day the major difficulties they had encountered. They were to specify _who_ was involved, _what_ was involved, _what_ was said by the parties, how they tried to solve the problem, and what the _outcome_ and _prognosis_ were. These provided an extraordinarily rich picture of the utilization Volunteer's job. The systematic collection of such material can provide an administrator with a picture of a project's problems which casual conversations might leave obscure. It seems to us that it would be useful to collect these once or twice a year, and especially with new Volunteers who may need special administrative support. Such critical incident material can also be of great help in the training of Volunteers, particularly new ones.

Interviews, Class and School Visits. Interviewing of a broad range of teachers each representing the work of a different utilization Volunteer can provide useful information on the effectiveness of the Volunteer program. As with all interviews, these should be focused, and some sort of outline should be used (one we used for this purpose can be found in _Appendix E, Report No. 2_, this series). Sampling again is important, to avoid bias. Class and school visits of course are valuable, and have been used regularly by ETV Project administrators.

A Note of Warning: The purpose of any feedback is to improve a project. However, certain techniques, carelessly used, can appear to those whose activities or views are being studied as spying. This is especially true of interviewing. For this reason, it is important that interviews have a clear and reasonable purpose intelligible to the respondent. Moreover, the system for processing replies and relaying results to administrators must insure the anonymity of individual replies.

Part IV: Flow and Treatment of Feedback

The flow and treatment of feedback -- who gets it, and what he is ready or able to do with it -- is as important for its utility to a project as its quality. Any scheme for feedback should give careful consideration to the dissemination of information and its translation into policy and action. This is especially important when a project has a separate research component partly concerned with providing feedback, for inappropriate flow and treatment of feedback can seriously restrict the value of its contributions.

Using the Peace Corps ETV Project in Colombia as an example, we will discuss two models representing patterns of flow and treatment of feedback which commonly develop in this kind of program. Each, however, is appropriate only for a certain *kind* of feedback. When the wrong model is used, as frequently happens, the value of feedback is reduced.

We would like to distinguish between two kinds of feedback:

a) Feedback for use by individuals in their own work, which does not affect broad policies or procedures. We will arbitrarily call this *individual* feedback.

b) Feedback affecting large segments of the project, which bears on broad policies and procedures. We will arbitrarily call this *project* feedback.

Of the first sort are some of the feedback schemes discussed in *Part III*, such as the interviewing of teachers by producers. Of the second sort are most of the feedback schemes covered in this report.

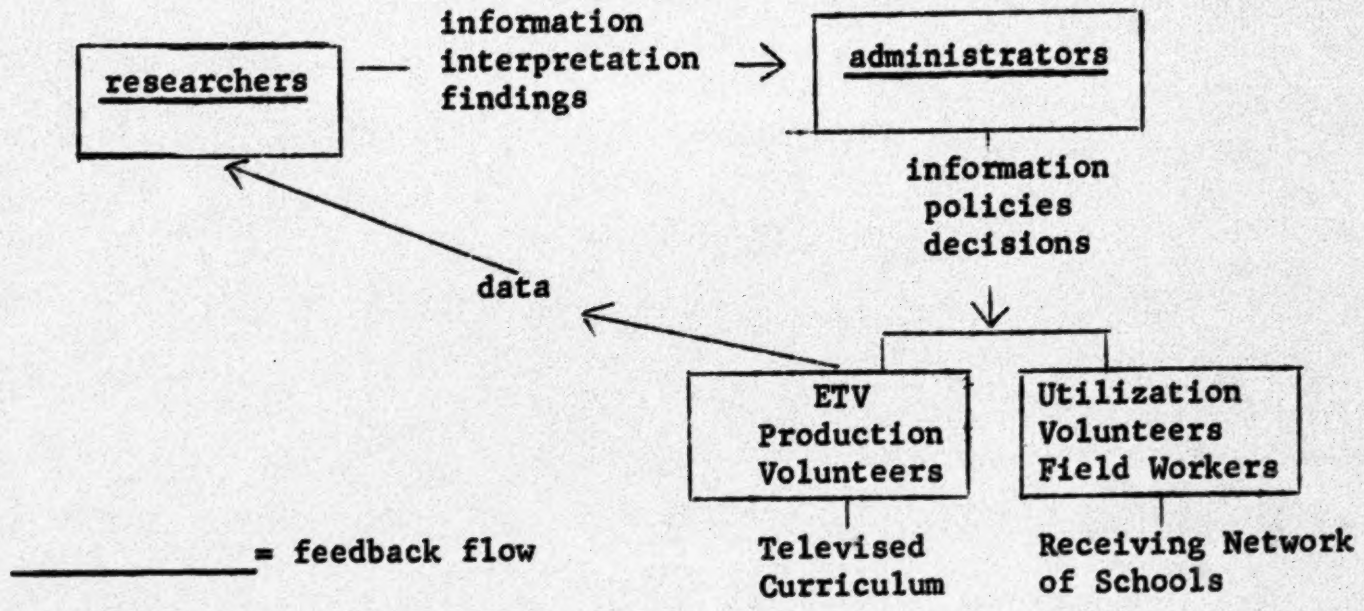
and especially those discussed in Parts I and II. In the former, information is passed on directly to those who will use it in their work; if there is a research component, researchers may help with techniques, and analysis and interpretation, and the procedure may be monitored by administrators. In the latter, because broader issues are involved, the information, after analysis and interpretation by researchers, can primarily be useful after it has been translated by administrators into decisions and policies. These, along with the information itself, can then be communicated by administrators to those who actually do the job.

The two models are shown in Figure 10:6, using the ETV Project as an example. Note that in both the components are the same -- researchers, administrators, and field workers (in this case, production and utilization Volunteers). However, the flow and treatment of information in each is very different.

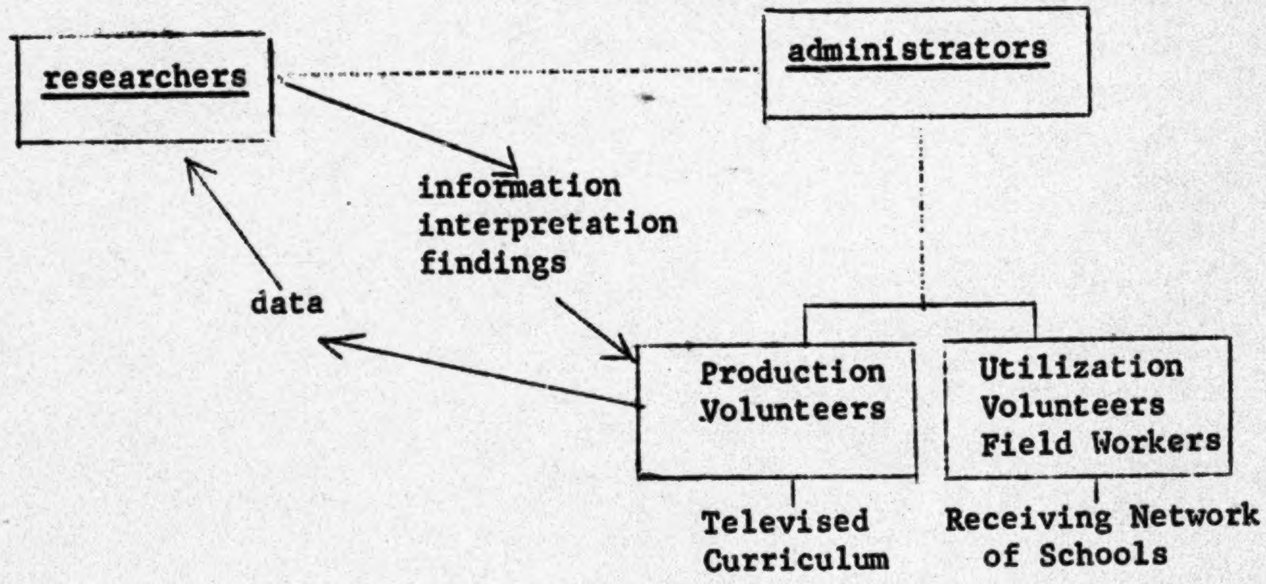
When the pattern for individual feedback is used for project feedback, for whatever reason, the usefulness of project feedback is markedly reduced. Broad policies and decisions which might be made are not made; every field worker makes his own interpretation of the value and meaning of the feedback, and these vary, as will the degree to which the feedback is considered at all; and, because there are so many field workers, the quantity of information and advice which the researchers can relay is severely limited, and communication, unlike that possible between a few researchers and a few administrators, is likely to flow only one way.

Figure 10:6 : Two Models of Patterns for Flow and Treatment of Feedback

Pattern for Effective Project Feedback:


researchers
information
interpretation
findings
administrators
information
policies
decisions
data
ETV
Production
Volunteers
Utilization
Volunteers
Field Workers
Televised
Curriculum
Receiving Network
of Schools
= feedback flow

Pattern Effective Only for Individual Feedback:


researchers
administrators
information
interpretation
findings
data
Production
Volunteers
Utilization
Volunteers
Field Workers
Televised
Curriculum
Receiving Network
of Schools

Unfortunately, there are a variety of factors which push toward use of the model for individual feedback for all feedback in an operation with the structure of the ETV Project (and this probably includes many Peace Corps undertakings). One is simply the heavy work load of administrators. The variety of activities and number of people for which one person is likely to be responsible is prodigious. It is understandably tempting to simply pass information along, and let others make of it what they can. Another is the independence of the Volunteer (itself partly a result of the heavy load on administrators), who sets many of his own work standards and procedures. He is apt to demand that information come directly to him, so that he can evaluate it himself, and he is very likely to be impatient with anything that does not relate directly to his own job and his chosen way of performing it. When the Volunteer helps to gather the data, he has an added reason for making such demands. Unless administrators take a vigorous role, feedback may be left to flow directly to the Volunteer. Moreover, even the kind of feedback gathered may be limited to what the Volunteer thinks is valuable to him individually. The very serious consequence is that feedback may fall far short of its potential utility for the project as a whole.

There is no simple way to avoid this. Two of the requirements are close and willing cooperation between researchers and administrators, and the cultivation of an understanding of the purpose of feedback schemes among Volunteers. Researchers and administrators must agree in advance on the kind of information to be obtained, and Volunteers must understand how administrators can use it. This requires frequent communication between researchers and administrators and Volunteers. The time required by researchers for the competent gathering, processing, analysis, interpretation, and reporting of feedback must also be understood and accepted by administrators and Volunteers, to avoid unnecessary dissatisfaction. However, the single most important factor is the commitment of administrators to the appropriate flow and treatment of feedback.

Part V: Applicability of These Techniques to Other Projects

The applicability of these feedback techniques to other educational television projects is obvious, and needs no discussion. However, it seems to us that many of our procedures could be used as a model for designing feedback procedures for other kinds of projects, and especially Peace Corps projects, which are similar either in structure or function.

The ETV Project, on the one hand, was concerned with turning out a product -- the televised instruction. This is common to many programs, especially those in education and information -- whether the "students" be farmers, college students, teachers, or children. Texts, courses, visual displays, leaflets, and the like could be treated much the same as we treated the televised curriculum. Those already produced could be evaluated, and the evaluations compared, just as was done with the televised courses for pupils. And when new kinds of products are introduced, the doubts and wants of potential users could be explored in order to design a program which would bring in the largest audience, just as was done for the televising of in-service courses to teachers.

The ETV Project, on the other hand, was concerned with the use of television in the schools, and with the effectiveness and direction of its utilization Volunteer program to promote good ETV use. Many kinds of projects are concerned with the use of their products in some kind of "receiving network," although no broadcasting may be involved. Also many kinds of projects are concerned with the effectiveness and direction of some kind of counseling or in-service training program involving numerous workers covering a broad geographical area. Again, these are especially common to education and information programs, whoever the "students" may be. Our procedures for obtaining feedback on the state of the operation as a whole, on its operation in various areas, and the sites or groups (in our case, schools) where more attention is greatly needed could be readily adapted to the special needs of other projects.

The procedures we found successful have a special interest because they were developed and used in connection with a new undertaking in a developing country. We were far less confident about their utility when we began than we are now. The major tool we have discussed here is a mail-return survey, using a self-completion questionnaire delivered by field workers while performing their other services (in our case, Volunteers). Few of our respondents (Colombian teachers) had had any experience with such a procedure, and even fewer probably had any idea as to its potential usefulness. Certainly, their education, ending for some with high school and for most with the fifth grade, would give no reason for optimism over the likely quantity or quality of returns. Yet, the outcome was in every respect gratifying, and repeatedly so (altogether we conducted six different surveys). Many doubted, as did we at each step, whether this useful tool could be used successfully. Because of our experience, we see no reason why it should not be used in other projects where similar feedback is badly needed.

One of the kinds of items we used in our surveys calls for special mention. This is the "problem" or "dissatisfaction" inventories or check-lists. It seems to us that the three step procedure -- collecting of specific, anecdotal accounts, their classification and translation into objective items, and their inclusion in a questionnaire for broad measurement in a survey -- could be applied in many instances. Each step provides valuable information, and the final check-list could be used for self-reports, or reports by observers, as well as in a survey. In our case, the instrument which was developed proved powerful enough to identify the most elusive of all problems in a program -- the place or site where more attention is needed.

Part VI: Where the Full Data Can Be Found

This report has dealt only with procedures. However, in discussing them it has frequently been necessary to refer to results obtained by their use. Full details on these results can be found in other reports being published in this series:

On reactions and attitudes of teachers toward the instruction televised for their pupils and toward the Teacher Guides, in Report No. 8: The Televised Curriculum and the Colombian Teacher.

On results of achievement tests on Colombian pupils, in Report No. 2: The Project's First Semester -- Pupil Achievement, Teacher Attitudes, and the Work of the Utilization Volunteer, and in Report No. 3: Improving the Effectiveness of the Utilization Volunteer and the Utilization of ETV by the Colombian Teacher.

On reactions and attitudes of teachers toward televised instruction for teachers, and results of achievement tests on Colombian teachers, in Report No. 6: Instructional Television for the In-Service Training of the Colombian Teacher.

On the attitudes of teachers toward the utilization Volunteer, and the impact of the utilization Volunteer's work, in Report No. 2: The Project's First Semester -- Pupil Achievement, Teacher Attitudes, and the Work of the Utilization Volunteer, and in Report No. 4: The Colombian Teacher and the Utilization Volunteer -- Making ETV Work in the Schools of a Developing Country.

On "critical incidents" and the utilization Volunteer's daily activities, in Report No. 5: The Day-to-Day Job of the Utilization Volunteer -- Structure, Problems, and Solutions.

All research, of course, provides feedback, and a complete review of all of our feedback would constitute no less than a complete review of all our research. Here, we have concentrated on procedures, and in particular on procedures which could be easily used again with little change, which do not involve complicated analyses, and which provide information that can be put directly to use in the daily operation of the project. Thus, we have given no attention here to research bearing on evaluation of a component of the project, such as the Volunteer utilization program, or on the project as a whole. For this kind of approach, and for additional illustrations of feedback techniques, as well as for the results and analyses which might be used, see the reports above, or the other reports in this series, all of which are listed at the end of this report.

FOOTNOTES

[1] For more on the ETV Project as a whole, see Report No. 1 (*), this series. For more on the televised curriculum for pupils, see Report No. 8 (*), this series. For more on the televised instruction for teachers, see Report No. 6 (*), this series. For more on the utilization Volunteer, see Reports No. 2 and 5 (*), this series.

[2] During 1964, one course was telecast for the second grade, two for the first, third, and fourth grades, and three for the fifth grade. During 1965, three were telecast for each of the five grades.

[3] For more detailed discussion of sampling and surveying teachers in Colombia, see Reports No. 2 and 4 (*), this series.

[4] For the analyses of the "dissatisfaction inventory," see Report No. 8 (*), this series.

[5] For more on some of the problems of research in a developing country, see An Introduction (*), this series.

[6] The schools identified as "high problem" schools were reported to the Peace Corps ETV Project Director in a special report entitled The Problem Schools. This and other previous publications are listed in the Introduction (*), this series.

[7] For more on this factor analysis, see Report No. 8 (*), this series.

[8] For a thorough treatment of the "critical incident" technique, see Flanagan, John C., "The Critical Incident Technique". Psychol. Bull., 1954, Vol. 51, 4, pp. 327-358.

(*) Titles are listed in Reports in This Series, at the end of this volume.

Appendix A: Questionnaire Used for Evaluation by Teachers of the Televised Courses for Their Pupils (Version used in our final survey, made at the end of the second semester of 1965.)

Esta sección se refiere a los Programas de Televisión sobre: *
Esta sección debe ser llenada solamente por maestros que dictaron este curso y que también usaron la Televisión Educativa durante el semestre que está terminando.

**1. Teniendo en cuenta todoslos aspectos de los programas para este curso durante este semestre, cuantas de las emisiones televisadas diria Ud. que han sido excelentes?

_____ todas las emisiones
_____ no todas, pero casi todas
_____ un poco más de la mitad
_____ un poco menos de la mitad
_____ solo unas pocas
_____ casi ninguna

**2. Cuáles de los siguientes problemas ha Ud. encontrado este semestre en los programas de este curso? (marque todos los que se aplican, sí no se aplica ninguno, no ponga nada).

_____ Los programas abarcan demasiado para que los niños los puedan entender.
_____ Los niños no pueden ver claramente los objetos, mapas o cuadros que les muestran.
_____ Los programas enseñan muy pocas cosas que los profesores no pueden enseñar en las clases.
_____ El telemaestro no tiene bastante personalidad para presentarse en la televisión.
_____ Los programas entretienen, pero enseñan muy poco a los ninos.
_____ Los niños aprenden solamente por la motivación y por el repaso y no por el programa en sí.
Los programas no enseñan conceptos, solamente hechos.

**3. En lo que se refiere al contenido de este curso para este semestre, diría que es: un poco dificil, apenas bueno, o un poco fácil para los ninos de este grado.

_____ un poco dificíl _____ apenas bueno _____ un poco fácil

**4. En relación a la información dada por las guías de este curso, durante el semestre que está terminando, podría usted decir cuántos programas han recibido la suficiente información para preparar con anticipación una buena lección?

_____ todas las emisiones
_____ no todas, pero casi todas
_____ un poco más de la mitad
_____ un poco menos de la mitad
_____ solo unas pocas
_____ casi ninguna

Recuerde, todas las preguntas anteriores se refieren a ____*

*Name of course. Each teacher received a separate page for each course, and the courses varied, depending on the grade taught.

**Items discussed in the text.

This section refers to the televised programs for: | *

This section should be completed only by teachers who taught this course using educational television during the past semester.

**1. Taking into account all aspects of the programs for this course during the semester, how many telecasts would you say were excellent?

_____ all	_____ a few less than half
_____ almost all	_____ only a few
_____ a few more than half	_____ almost none

**2. Which of the following problems have you encountered with the programs for this course during the semester? (check as many as apply, if none applies, check none)

_____ The programs cover too much material for the children to comprehend.

_____ The children are not able to see clearly objects, maps, and things which are shown.

_____ The programs teach little the classroom teacher cannot teach.

_____ The tele-teacher does not have a good personality for television.

_____ The programs entertain, but teach very little.

_____ The children learn only from the motivation and follow-up, not from the program.

_____ The programs do not teach concepts, only facts.

**3. With respect to the content of the course for this semester, would you say that it is a little too difficult, about right, or a little too easy for the children in this grade?

_____ a little too difficult   _____ about right   _____ a little too easy

**4. In regard to the information in the guides for this course, how many times during the past semester would you say you had enough information to prepare a good lesson in advance?

_____ all the telecasts	_____ a few less than half
_____ almost all	_____ only a few
_____ a few more than half	_____ almost none

Remember, all the questions above refer to ______________ *

---

*Name of course. Each teacher received a separate page for each course, and the courses varied depending on the grade taught.

**Items discussed in the text.

Appendix B: Televised Instruction for Teachers' Questionnaire

(NOTA: Rogamos llenar el siguiente cuestionario antes de comenzar a contestar el Test de Matemáticas Básicas).

Por favor, quiere Ud. darnos los siguientes datos personales?

1. Sexo: _____ Hombre _____ Mujer
2. Edad: (Marque donde se aplique a Ud.) _____ 21 años o menos
   _____ 22 hasta 30 _____ 31 hasta 45 _____ 46 hasta 60
   _____ 61 o más
3. Curso en que enseña: _____ 1° _____ 2° _____ 3° _____ 4° _____ 5°
4. Años de práctica: (Marque donde se aplique a Ud.)
   _____ 2 años o menos _____ 3 hasta 5 años _____ 6 hasta 10 años
   _____ 10 hasta 20 años _____ 61 o más
5. Tiene certificado de 5° de primaria? _____ Si _____ No
6. Marque con una X los años que tiene aprobados de secundaria _____ 1° _____ 2° _____ 3° _____ 4°
7. Tiene Ud. grado de bachiller? _____ Si _____ No
8. Marque con una X el grado de Normalista que tiene: _____ Rural
   _____ Superior

En relación con el curso de orientación para los maestros sobre matemáticas modernas dado por televisión el semestre pasado como parte del Proyecto de Televisión Educativa, por favor suminístrenos la siguiente información:

1. Durante el semestre pasado hubo 17 programas de orientación para maestros sobre matemáticas modernas. A algunos maestros no les fue posible ver ninguno de estos programas. Otros maestros pudieron ver casi todos los programas. Por favor indique abajo cuántos programas de orientación para maestros pudo Ud. ver?
   _____ Todos (17 programas) _____ Casi todos (11 - 16)
   _____ Más o menos la mitad (8 - 10) _____ Algunos (1 - 7)
   _____ Ninguno

2. Después de ver cada uno de los programas de orientación para maestros sobre matemáticas modernas, algunos de los maestros efectuaron discusiones organizadas sobre el material que se había estudiado. Otros maestros no tuvieron estas discusiones. Por favor indique abajo con cuanta frecuencia asistío Ud. a tales discusiones.
   _____ Asistí después de todos los programas _____ Asistí después de casi todos los programas
   _____ Asistí después de más o menos la mitad de los programas _____ Asistí despues de menos de la mitad de los programas

---

_____ No ví los programas

---

3. Algunos maestros tomaron apuntes detallados en relación con el curso de orientación para maestros sobre matemáticas modernas. Otros no. Tomó Ud. apuntes?

_____ Si _____ No

No ví los programas

4. Algunas maestros vieron los programas de orientacion para maestros sobre matematicas modernas con un Voluntario del Cuerpo de Paz, otros los vieron sin la presencia de un Voluntario del Cuerpo de Paz. Los vio Ud. con un Voluntario?

_____ Nunca los vi con un Voluntario del Cuerpo de Paz
_____ Algunas veces _____ Casi siempre _____ Siempre

No ví los programas

*5. Cuál de las siguientes actividades adicionales a los cursos de orientación para maestros cree Ud. que le permitirían aprovechar más un curso dado por televisión, como por ejemplo el curso sobre matemáticas modernas para maestros? Marque todo lo que se aplique.

_____ Discusiones con otros maestros sobre el material del curso
_____ Una Guía para el Tele-curso (tal como la que se usó)
_____ Material impreso además de la Guia
_____ Problemas especiales y ejercicios para prácticas privadas adicionales (tales como las que se podrían presentar en un folleto especial)
_____ Oportunidad de hacer preguntas a un experto en la materia
_____ Conferencia de un experto en la material

*6. Algunos maestros prefieren ver un curso por televisión. Otros maestros prefieren asistir a una clase con un maestro presente. Qué piensa Ud. al respecto?

_____ Prefiero la televisión _____ Prefiero al maestro presente
_____ No tengo preferencia

*7. Algunos maestros piensan que pueden aprender lo mismo por medio de cursos televisados como aprenderían con un maestro en la clase. Otros no creen que pueden aprender lo mismo. Qué piensa Ud. al respecto?

_____ Se puede aprender lo mismo por medio de la televisión
_____ No se puede aprender lo mismo por medio de la televisión

*Items discussed in text.

Please supply the following personal data:

Are you Director of this school? _____ Yes _____ No

1. Sex: _____ Male _____ Female
2. Age: (check which applies to you)
   _____ 21 or less _____ 22-30 _____ 31-45 _____ 45-60
   _____ 60 or over
3. Grade taught: _____ first _____ 2nd _____ 3rd _____ 4th _____ 5th
4. Years of teaching: (check that which applies to you)
   _____ 2 years or less _____ 3-5 years _____ 6-10 years
   _____ 10-20 years _____ 20 years or over
5. Do you have a fifth grade primary certificate? _____ Yes _____ No
6. Check how many grades of secondary school completed: _____ 1st
   _____ 2nd _____ 3rd _____ 4th _____ 5th
7. Do you have a"Bachillerato"? _____ Yes _____ No
8. Check which kind of normal school degree you have: _____ Rural
   _____ Superior

Would you please give us the following information on the ETV Project's Teacher Training course in modern mathematics of the past semester:

1. During the past semester, there were 17 teacher training programs on modern mathematics. For some teachers, it was impossible to watch any of these programs. Others could watch almost all the programs. Please indicate below how many teacher training programs you were able to watch.
   _____ All (17 programs) _____ Almost all (11-16 programs)
   _____ About half (8-10) _____ Some (1-7) _____ None

2. After watching each teacher training program, some teachers took part in organized discussions on the material covered. Other teachers did not participate in these discussions. Please indicate below how often you participated in discussions.
   _____ Participated after all the programs
   _____ Participated after almost all the programs
   _____ Participated after about half the programs
   _____ Participated after less than half the programs
   _____ Did not watch the programs

3. Some teachers took detailed notes on the teacher training course in modern mathematics. Others did not. Did you take notes?
   _____ Yes _____ No _____ Did not watch the programs

4. Some teachers watched the teacher training programs in modern mathematics with a Peace Corps Volunteer, others without his presence. Did you watch with a Volunteer?
   _____ Never watched with a Volunteer
   _____ Sometimes
   _____ Always
   _____ Almost always
   _____ Did not watch the programs

*5. Which of the following activities, in addition to the televised instruction for teachers, do you think would help you learn more from such a course, as for example the televised course for teachers on modern mathematics? (Mark all that apply.)

_____ Discussions with other teachers on course content.
_____ A teacher Guide, such as was used with the modern mathematics course.
_____ Special printed material in addition to the Guide.
_____ Special problems and exercises for additional private practice.
_____ Opportunity to ask questions of an expert in the subject.
_____ Participation in a meeting or class led by an expert in the subject.

*6. Some teachers prefer to watch a television course. Other teachers prefer to participate in a class led by a teacher. What do you think?

_____ Prefer television
_____ Have no preference
_____ Prefer a teacher leading the class

*7. Some teachers think one can learn the same from televised courses as from a course led by a teacher. Others don't think one can learn as much. What do you think?

_____ One can learn the same through television.
_____ One cannot learn the same through television.

* Items discussed in text.

Appendix C: Teacher Questionnaire Containing Items Used in Feedback on Receiving Network for Project as a Whole, Areas, and Individual Schools (Version used in our final survey, made at the end of the second semester, 1965)

Ultima Sección: Esta sección debe ser llenada por todos los maestros que utilizan la Televisión Educativa.*

1. Cree Ud. que el Voluntario puede dar al maestro gran ayuda, alguna, muy poca, o ninguna ayuda en su trabajo de clase?
_____ ninguna _____ muy poca _____ alguna _____ gran ayuda

**2. Cree Ud. que la televisión puede ayudar mucho, algo, poco o nada a reforzar su propia enseñanza?
_____ nada _____ poco _____ algo _____ mucho

3. Cree Ud. que la televisión hará que el maestro utilice más, menos o la misma cantidad de tiempo en preparar las lecciones?
_____ menos tiempo _____ más o menos la misma cantidad de tiempo

**4. En lo referente al uso de la televisión cuáles de las siguentes dificultades ha encontrado Ud. durante el semestre que está terminando? (marque todos los que se aplican si no se aplica ninguno no pongo nada).
_____ Los cursos no pueden cambiarse de un salón a otro eficientemente, y con esta confusión, se pierde mucho tiempo.
_____ La electricidad no es siempre buena.
_____ La luz es buena, pero el aparato no funciona.
_____ El aparato es tan complicado que aún, cuando está funcionando, hay dificultades al graduarlo para que la imagen y el sonido sean claros.
_____ Los programas televisados coinciden con los recreos.
_____ Parece que nunca hay tiempo suficiente inmediatamente, antes y después de los programas de televisión, para realizar una motivación y un repaso apropiados.
_____ La televisión coincide con las actividades religiosas.
_____ La televisión hace que los niños sean indisciplinados.

---

*Since this section was preceded by separate pages for each televised course for pupils the teacher might use in his own teaching, and cautioned the teacher to reply only if he did teach the course, this was intended to indicate to that teacher that this section should be completed even if he had not completed all of the preceding pages.

**Items discussed in the text.

**5. Teniendo en cuenta el salón en el cual los niños ven los programas de televisión, cuales de las siguientes observaciones han sido problemasen su clase durante el semestre que está terminando? (marque todas las que se aplican, si no se aplica ninguna, no ponga nada.)

_____ El salón no es suficientemente oscuro
_____ No hay siempre bancas o asientos suficientes para todos los alumnos.
_____ El aparato de televisión no está colocado en el lugar apropiado del salón para que todos los niños puedan verlo.
_____ Hay tantos niños en el salón que muchos no pueden sentarse cómodamente, ni ver los programas con tranquilidad.
_____ Frecuentemente llegan demasiados ruidos de afuera, al salón de la televisión.
_____ Aunque no llegue demasiado ruido de afuera, los alumnos no pueden oír el sonido claramente debido a que la recepción es mala.

6. A quién haria Ud. un reclamo, comentario, o sugerencia sobre el programa de televisión? (marque todos los que se aplican).

_____ Instituto Nacional de Radio y Television
_____ Supervisor de la zona
_____ Ministerio de Educacion
_____ Ministerio de Comunicaciones
_____ Director de la Escuela
_____ Voluntario del Cuerpo de Paz
_____ Telemaestro
_____ Coordinador de Televisión Educativa, o Maestros en Comisión que le ayúdan con la Televisión Educativa, o al departamento de personal que trabaja especialmente en Televisión Educativa

**7. En cuanto a los consejos sobre ensenanza que los Voluntarios del Cuerpo de Paz le han dado, podría Ud. decir que: (marque uno).

_____ Sus consejos usualmente no son muy buenos.
_____ Sus consejos pueden ser buenos pero no suficientemente claros para ponerlos en prática.
_____ Sus consejos pueden ser buenos pero carezco del material necesario para ponerlos en practica.
_____ Sus consejos son buenos y casi siempre puedo utilizarlos.

8. En qué forma cree Ud. que el Voluntario del Cuerpo de Paz puede ser mejor preparado o entrenado para que pueda proporcionarle a Ud. mayor ayuda en el uso de la Televisión en sus clases? (marque todos los que se aplican, si no se aplica ninguno no marque nada).

_____ Hablando mejor español.
_____ Teniendo un mejor conocimiento de métodos de ensenanza.
_____ Conociendo más a fondo los problemas de los maestros.
_____ Proporcionando más materiales de ensenanza -- ayuda audio visual, equipo, papeleria, libros, implementos, etc.

**Items discussed in the text.

**9. Diría Ud. que un Voluntario del Cuerpo de Paz hasta ahora le ha prestado gran ayuda, alguna ayuda, poca ayuda, o ninguna ayuda en relación con la forma de utilizar los programas de televisión eficazmente en su enseñanza?

_____ ninguna ayuda _____ poca ayuda _____alguna ayuda _____ gran ayuda

**10. En promedio, con qué frecuencia ha visitado su escuela un Voluntario del Cuerpo de Paz en relación con los programas de Televisión Educativa durante el semestre que esta terminando?

_____ dos veces por semana
_____ una vez cada dos semanas
_____ rara vez
_____ una vez por semana
_____ menos de una vez cada dos semanas

**11. En promedio, con qué frecuencia ha conversado Ud. cuando visita su escuela el Voluntario del Cuerpo de Paz sobre la forma de usar los programas de Televisión en forma mas eficaz durante el semestre que está terminando?

_____ dos veces por semana
_____ una vez cada dos semanas
_____ rara rez
_____ una vez por semana
_____ menos de una vez cada dos semanas

12. Con cuáles de las siguientes personas ha discutido frecuentemente sobre los programas de Televisión Educative u otros aspectos del proyecto? (marque todas las que se aplican, sí no se aplica ninguna, no marque nada.)

_____ Otras maestros en ostras escuelas
_____ Otros maestros en su escuela
_____ Amigos y familiares
_____Director de la escuela
_____ Padres de los alumnos
_____ Supervisor de la zona
_____ Coordinador de Televisión Educativa, o Maestros en Comision que le ayudan con la Televisión Educativa, o al Dpto. de personal que trabaja especialmente en ETV.

13. Encuonto a las visitas de los Voluntarios del Cuerpo de Paz, le gustaría que el Voluntario lo visitare con menos frecuencia lo mismo que ahora, o con más frecuencia?

_____ menos frecuencia _____ lo mismo que ahora _____ mas frecuencia

14. Algunos maestros quisieran que se aumentara el número de cursos televisados de ensenanza primaria. Otros piensan que el número actual de cursos es suficiente. Algunos otros quisieran que se disminuyera el número de cursos televisados. Qúe piensa Ud.

_____ Se deben televisar menos cursos
_____ El número actual es suficiente
_____ Se deben televisar mas cursos.

** Items discussed in the text.

15. Sí nuevos cursos se pudieran aumentar al horario de la televisión, que cursos preferiría Ud.? Por favor denos su preferencia colocando un numéro 1 al lado del nombre del curso que a usted le gustaría mas que se aumentara, y un numéro 2 al lado del nombre del curso que le sigue en preferencia. No haga ninguna otra marca.

Grado	**Cursos que pudieran ser aumentados:**			
Primero:	___ Naturales	___ Sociales		
Segundo:	___ Naturales	___ Sociales	___ Música	
Tercero:		___ Sociales	___ Música	
Quarto:			___ Música	___ Lenguaje
Quinto:			___ Música	___ Lenguaje

16. Hay nuevos cursos que no se enumeraron y que a Ud. le gustaría verlos televisados? Sí es así, cuáles son?______________________

____

**17. Teniendo encuenta todos los aspectos de los programas de Televisión Educativa, qué es lo que más le gusta? Qúe es lo que menos le gusta? Qúe le gustaria que fuera cambiado? (conteste abajo)

Lo que más me gusta: ______________________________

____

Lo que menos me gusta:______________________________

____

Lo que me gustaría cambiar: ___________________________

____

18. Por favor, quisiera darnos los siguientes datos personales:
Es Ud. director de esta escuela? _____ Si _____ No
Sexo: _____ Hombre _____ Mujer
Edad: (marque donde se aplique a usted)
_____ 21 años o menos _____ 22 hasta 30 _____ 31 hasta 45
_____ 45 hasta 60 _____ 61 o más
Anos de práctica: (marque donde se aplique a usted)
_____ 2 años o menos _____ 3 hasta 5 años _____ 6 hasta 10 años
_____ 10 hasta 20 años _____ 20 o más anos
Tiene certificado de 5° de primaria? _____ Si _____ No
Marque con una X los años aprobados de secundaria:
___ 1° ___ 2° ___ 3° ___ 4° ___ 5°
Tiene grado de Bachiller? _____ Si _____ No
Marque con una X el grado de Normalista que tiene _____ Rural
_____ Superior

Gracias. Favor devolverlo inmediatamente por correo, en el sobre adjunto.

**Items discussed in the text.

This section should be completed by all teachers using educational television.

1. Do you think the Volunteer can give a great deal of help, some help, little help or almost no help to the teacher in his work with the class?
_____ no help _____ little help _____ some help _____ a great deal of help

**2. Do you think television can give a great deal of help, some help, little help or no help in your own teaching?
_____ no help _____ little help _____ some help _____ a great deal of help

3. Do you think television requires more, less, or about the same time of the teacher in preparing classes?
_____ less time _____ about the same time _____ more time

**4. Which of the following difficulties have you encountered in using television during the past semester? (Check all that apply. If none apply, check none.)
_____ The classes are not able to change from room to room efficiently, and there is much confusion so that much time is lost.
_____ The electricity often fails.
_____ Although the electricity is good, the TV set often does not work.
_____ The TV set is so complicated that although it works, it is difficult to adjust for clear image and sound.
_____ The television schedule conflicts with the recreation period.
_____ There never seems to be sufficient time immediately before and after the televised programs for the appropriate "motivation" and "follow-up".
_____ The television schedule conflicts with religious activities.
_____ The television programs make the children undisciplined.

**5. Which of the following observations has been a problem with your class in the room where the children watched the telecasts during the past semester?
_____ The room is not dark enough.
_____ There are not always enough seats and benches for all the children.
_____ The TV set is not located in a proper place in the room so that all the children can see it.
_____ There are so many children in the room that many cannot sit comfortably or watch undisturbed.
_____ Frequently there is interference from outside noise in the television room.
_____ Although there is no interference from outside noise, the children are unable to hear the sound clearly because reception is bad.

**Items discussed in the text.

6. To whom would you turn with a complaint, comment or suggestion about the television program? (Mark all that apply.)
_____ Institute Nacional de Radio y Television
_____ Supervisor of the zone
_____ Ministry of Education
_____ Ministry of Communication
_____ Director of your school
_____ Peace Corps Volunteer
_____ Tele-teacher
_____ ETV coordinator or teachers commissioned to help with ETV or departmental personnel working specially with ETV.

**7. In regard to the advice about teaching that the Peace Corps Volunteer has given, would you say it has been: (Mark one.)
_____ His advice is usually not very good.
_____ His advice could be good, but it is not sufficiently clear to put into practice.
_____ His advice may be good, but I do not have the necessary material to put it into practice.
_____ His advice is good and can almost always be used.

**8. In what ways do you think the Peace Corps Volunteer could be better trained or prepared in order to help you use television better in your own teaching? (Check all that apply. If none apply, check none.)
_____ Speak better Spanish.
_____ Know more about methods of instruction.
_____ Know more about the problems of teachers.
_____ Supply more teaching materials -- audio-visual aids, equipment, paper, books, tools, etc.

**9. Would you say that the Peace Corps Volunteer has given a great deal of help, some help, little help or no help in your use of the televised courses in your own teaching?
_____ no help _____ little help _____ some help _____ a great deal of help

**10. How often, on the average, has the Peace Corps Volunteer visited your school in regard to the ETV project during the past semester?
_____ twice a week _____ once a week _____ once every two weeks
_____ less than once every two weeks _____ rarely

**11. On the average, how often did you converse with the Peace Corps Volunteer about utilizing the televised instruction when he visited your school during the past semester?
_____ twice a week _____ once a week _____ once every two weeks
_____ less than once every two weeks _____ rarely

**Items discussed in the text.

12. With which of the following persons have you had frequent discussions about the educational television programs and other aspects of the project? (Mark all that apply, if none apply, mark none.)

_____ Other teachers in other schools
_____ Friends and acquaintances
_____ ETV Coordinator or teachers commissioned to help with ETV or departmental personnel working specially with ETV
_____ Other teachers in your school
_____ Supervisor of the zone
_____ Pupils' parents
_____ Director of the school

13. Regarding the visits of the Peace Corps Volunteer, would you like him to visit you more often, less often or about as often as now?

_____ less often _____ same as now _____ more often

14. Some teachers would like to increase the number of televised courses in primary instruction. Others think that the present number of courses is enough. Some would like to decrease the number of televised courses. What do you think?

_____ Fewer courses should be televised
_____ The present number is enough
_____ More courses should be televised

15. If you could add new courses to the television schedule, which ones would you prefer? Please, indicate your preference by putting a 1 next to the course that you would most like to have added, a 2 next to the one you would prefer after that. Make no other checks.

Courses that could be added

Grade:

First:	___Natural Science	___Social Science		
Second:	___Natural Science	___Social Science	___Music	
Third:		___Social Science	___Music	
Fourth:			___Music	___Lenguaje
Fifth:			___Music	___Lenguaje

16. Are there any courses not listed that you would like to see on television? If so, what? ______________________________

**17. Keeping in mind all the aspects of educational television, what do you like most? The least? What would you like changed? (indicate below)

What I like the most: ______________________________
What I like the least: ______________________________
What I would like changed: ______________________________

**Items discussed in the text.

18. Please supply the following personal data:
Are you Director of this school? _____ Yes _____ No
Sex: _____ Male _____ Female
Age: (check that which applies to you)
_____ 21 or less _____ 22-30 _____ 31-45 _____ 45-60 _____ 60 or over
Years of teaching: (check that which applies to you)
_____ 2 years or less _____ 3-5 years _____ 6-10 years _____ 10-20 years
_____ 20 years or more
Do you have a fifth grade primary certificate? _____ Yes _____ No
Check how many grades of secondary school completed:
_____ 1st _____ 2nd _____ 3rd _____ 4th _____ 5th
Do you have a "Bachillerato"? _____ Yes _____ No
Check which kind of normal school degree you have:
_____ Rural _____ Superior

Thank you. Please mail right away in the enclosed envelope.

Appendix D: Teacher and School Identification Form

We used the following form on the first page of all our surveys for teacher identification:

Por favor llene los siguientes espacios. Esta información es necesario para procesar los datos. Sus respuestas serán consideradas como confidenciales.

NOMBRE:

ESCUELA:
(Nombre - Dirección - Ciudad

Please fill in the following. This information is necessary for processing the data. Your replies will be considered confidential.

NAME:

SCHOOL:
(name) - (street) - (city)

Reports In This Series

This series supplants all previous reports on the two years of research conducted on the Peace Corps Educational Television Project in Colombia. There are 12 volumes -- 10 research reports, each dealing with a different aspect of the project, plus *An Introduction*, concerned with the organization and conduct of the research, and a concluding *Overview*, containing a summary of the major findings and some general observations on the project.

The title of the series: *The Peace Corps Educational Television Project in Colombia -- Two Years of Research*.

The individual volumes:

An Introduction to Research Reports No. 1-10.

Report No. 1: The Project as a Whole -- Organization, Expansion, and Adaptation.

Report No. 2: The Project's First Semester -- Pupil Achievement, Teacher Attitudes, and the Work of the Utilization Volunteer.

Report No. 3: Improving the Effectiveness of the Utilization Volunteer and the Utilization of ETV by the Colombian Teacher.

Report No. 4: The Colombian Teacher and the Utilization Volunteer -- Making ETV Work in the Schools of a Developing Country.

Report No. 5: The Day-to-Day Job of the Utilization Volunteer -- Structure, Problems, and Solutions.

Report No. 6: Instructional Television for the In-Service Training of the Colombian Teacher.

Report No. 7: Improving the Effectiveness of Peace Corps Efforts to Change Teacher Behavior.

Report No. 8: The Televised Curriculum and the Colombian Teacher.

Report No. 9: The Volunteers.

Report No. 10: Feedback to the Peace Corps on Project Progress -- Some Models and Suggestion.

An Overview of Research Reports No. 1-10.

BRIEF FACTS

The ETV Project: In 1963, the Peace Corps, with the financial support of the Agency for International Development (AID), agreed to help the Colombian government establish a nationwide educational television (ETV) system directed primarily at improving public education. The initial Peace Corps goal was to provide televised instruction for primary school pupils and their teachers. It was hoped that eventually the system could also provide instruction for adults in literacy, health, agriculture, and topics of general interest, and for students beyond the primary grades. The ultimate Peace Corps goal is to establish an ETV system operated independently by Colombia. The project was inaugurated in Colombia at the beginning of 1964. It has had two major concerns in achieving its initial goal: the production of televised courses, and the building of a receiving network of schools with television in which teachers would build their own teaching around the instructional "core" provided by the telecasts. During the project's first three years (1964-1966), the number of Volunteers assigned to the project by the Peace Corps who have worked closely with Colombians toward these goals has ranged from 66 to 88. Of these, about half a dozen have been concerned with the installation and maintenance of TV sets in schools, between slightly more than half to two-thirds working with teachers in schools on making ETV more effective, and the rest with the production of telecasts. During the first year, 10 courses were telecast for pupils, each consisting of two 15 minute telecasts a week, for a weekly total of 300 minutes, exclusive of repeated programs; during 1965 and 1966, 15 such courses were telecast, for a weekly total of 450 minutes exclusive of repeated programs. In addition, individual programs and short courses have been telecast for teachers. When telecasting began in February, 1964, the receiving network encompassed approximately 200 schools, 1,000 teachers, and 38,000 pupils; by the end of 1964, 500 schools, 4,025 teachers, and 153,000 pupils; by the end of 1965, 925 schools, 7,000 teachers, and 260,000 pupils; and by the end of this year, 1,250 schools, 8,500 teachers, and 350,000 pupils. Telecasting has been over the open network of the Instituto de Radio y Television, a semi-government agency which telecasts commercially in the evenings, and which also has provided studio facilities for ETV. To achieve its ultimate goal, the Peace Corps has been concerned with building a permanent, financially viable, and competent organization to assume the Volunteers' functions. At present, Peace Corps participation is planned to continue up to the middle of 1968. For more on the ETV Project itself, see Report No. 1: The Project as a Whole -- Organization, Expansion, and Adaptation, this series.

The Research: Because Colombia was the first country in which the Peace Corps undertook an educational television (ETV) project, it decided to provide for close, thorough, and continuing research, and late in 1963 contracted with Stanford University's Institute for Communication Research. The Institute maintained a staff in Colombia actively engaged in research for the first two years of the ETV Project, from January, 1964, through January, 1966. The titles of the final series of reports on its studies appear on the previous page. For more on the research as a whole, see An Introduction to Reports No. 1-10, this series.